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CHAPTER 12: PROPOSED PHASE III EARLY RESTORATION PROJECTS: FLORIDA

12.1 Introduction

In response to the *Deepwater Horizon* Oil Spill, the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission have hosted, and continue to host, public meetings to inform the public about the NRDA process and, in particular, the Early Restoration process. As part of these meetings, the Florida Trustees have solicited, and continue to solicit, specific project ideas that could be implemented as part of the Early Restoration process. In addition to the public meetings, the Florida Trustees have also set up a website, <http://www.deepwaterhorizonflorida.com>, where members of the public can submit and view restoration project proposals. The Florida Trustees have compiled, and regularly update, a list of all project proposals received, which they have and will continue to consider when developing potential projects to be part of this and future Early Restoration efforts.

For the identification of potential Early Restoration projects, the Florida Trustees are only considering projects that occur within the limited geographic area of the 8-county panhandle region. This is the area in which boom was deployed and that was impacted by response and SCAT activities related to the Spill. In addition, DOI and NOAA identified potential projects utilizing screening considerations outlined in Chapter 7 focused on federal trust resources. Working from this structure, and as described in Chapter 2, the Trustees are proposing 30 projects in Florida, many of which have multiple components for Phase III of Early Restoration (see Table 12-1 and Figure 12-1 below). The first two projects in the table are projects that would be implemented by the US Department of the Interior in Florida. All 30 projects meet the criteria outlined in the OPA regulations, the Framework Agreement, and additional screening considerations applied by NOAA and DOI (see Chapter 7), and are consistent with the goal of compensating the public for natural resource injuries and loss of associated services resulting from the Spill.

Within the remainder of this chapter, there is a subsection for each proposed Phase III project. Each project-specific subsection begins with a general description of the project and relevant background information, followed by: 1) a discussion of the project's consistency with project evaluation criteria; 2) a description of planned performance criteria, monitoring and maintenance; 3) a description of the type and quantity of Offsets BP would receive if the project is selected for implementation; and 4) information about estimated project costs.

Each of the proposed projects falls within proposed project types in the Trustees' programmatic action alternatives, identified and evaluated in previous sections of this document (Chapters 5 and 6). Following each project description is a project-specific environmental review, which provides information and analysis about anticipated environmental consequences of the proposed project. These project-specific environmental reviews also help ensure proposed project locations, methods, timing and other factors reasonably maximize project benefits, minimize potential adverse consequences, and otherwise address environmental compliance needs.

Environmental Justice, as defined in Executive Order 12898, was not identified as an issue during the scoping period for this Phase III ERP/EIS. Based on county-level data, none of the eight Florida counties¹ where Early Restoration projects are planned qualify as areas of minority population pursuant to the CEQ and EPA guidelines. That is, the minority population in the eight county area (both as a whole and on a county-by-county basis) does not exceed 50 percent, nor is any minority population in this area meaningfully greater than the minority population percentage in the state.

Likewise, there is little concern that the area qualifies as a low-income population. The possible exception is Franklin County, where as of 2012, 24 percent of the population lives below the poverty threshold, which is 10 percent greater than the state-wide average. The Trustees have not determined that this is a meaningful difference such that Franklin County should be considered an Environmental Justice area of concern for the purposes of this document. However, even if Franklin County was considered to be an Environmental Justice area of concern, the projects proposed in the area would not have a disproportionate adverse impact on the county's low-income population, as no high and adverse impact is expected to result from the proposed projects. As discussed below, the projects would be expected to have positive impacts on all county residents' access to, and enjoyment of, area natural resources.

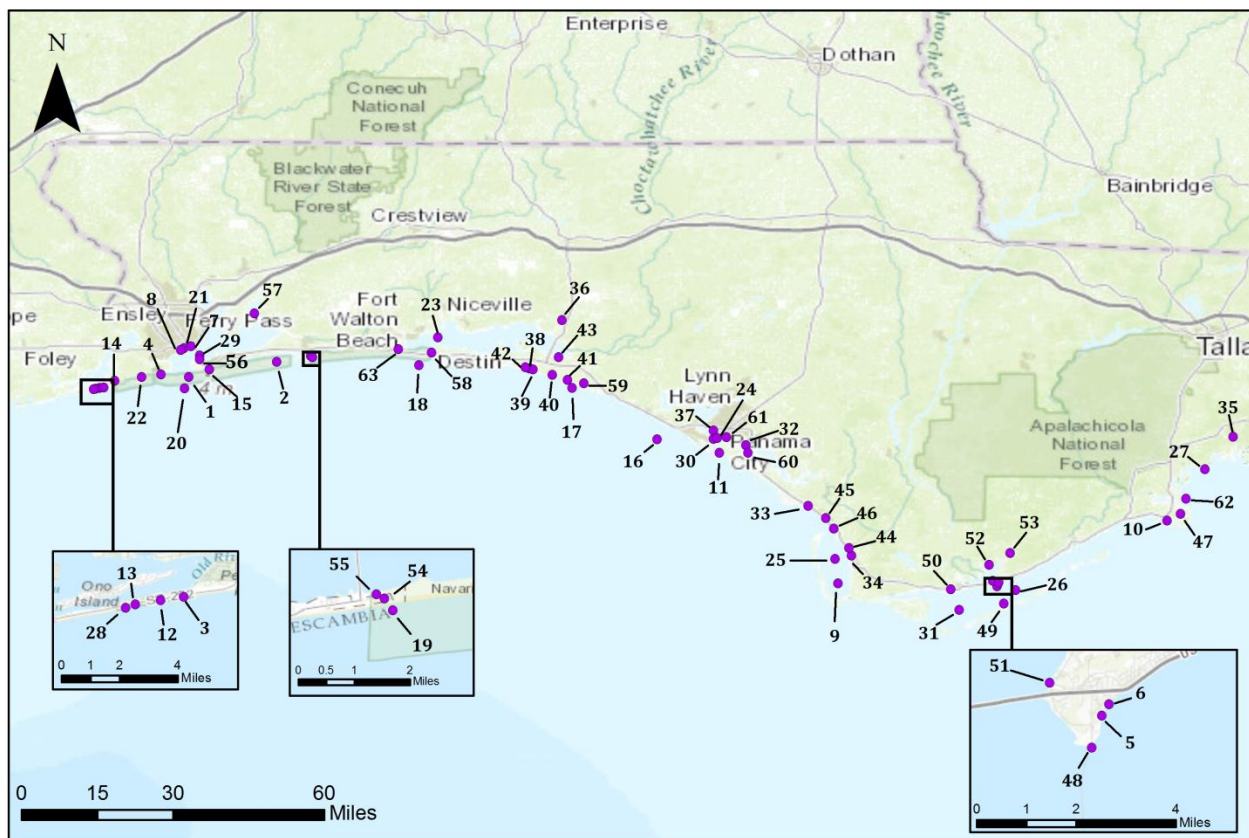
Table 12-1. Proposed Phase III Early Restoration projects in Florida.

	PROPOSED PROJECT	LOCATION	ALTERNATIVE 4											
			ALTERNATIVE 2									ALTERNATIVE 3		
			CREATE AND IMPROVE WETLANDS	PROTECT SHORELINES AND REDUCE EROSION	RESTORE BARRIER ISLANDS AND BEACHES	RESTORE AND PROTECT SUBMERGED AQUATIC VEGETATION	CONSERVE HABITAT	RESTORE OYSTERS	RESTORE AND PROTECT FINFISH	RESTORE AND PROTECT BIRDS	RESTORE AND PROTECT SEA TURTLES	ENHANCE PUBLIC ACCESS TO NATURAL RESOURCES FOR RECREATIONAL USE	ENHANCE RECREATIONAL EXPERIENCES	PROMOTE ENVIRONMENTAL AND CULTURAL STEWARDSHIP, EDUCATION, AND OUTREACH
1	Beach Enhancement Project at Gulf Islands National Seashore	FL ¹											X	
2	Ferry Project at Gulf Islands National Seashore	FL ¹										X		
3	Florida Cat Point Living Shoreline Project	FL	X	X										
4	Florida Pensacola Bay Living Shoreline Project	FL	X	X										
5	Florida Seagrass Recovery Project	FL				X								
6	Perdido Key State Park Beach Boardwalk Improvements	FL										X	X	
7	Big Lagoon State Park Boat Ramp Improvement	FL										X	X	
8	Bob Sikes Pier Parking and Trail Restoration	FL										X	X	

¹ Escambia, Santa Rosa, Okaloosa, Bay, Franklin, Wakulla, Gulf and Walton

	PROPOSED PROJECT	LOCATION	ALTERNATIVE 4											
			ALTERNATIVE 2									ALTERNATIVE 3		
			CREATE AND IMPROVE WETLANDS	PROTECT SHORELINES AND REDUCE EROSION	RESTORE BARRIER ISLANDS AND BEACHES	RESTORE AND PROTECT SUBMERGED AQUATIC VEGETATION	CONSERVE HABITAT	RESTORE OYSTERS	RESTORE AND PROTECT FINFISH	RESTORE AND PROTECT BIRDS	RESTORE AND PROTECT SEA TURTLES	ENHANCE PUBLIC ACCESS TO NATURAL RESOURCES FOR RECREATIONAL USE	ENHANCE RECREATIONAL EXPERIENCES	PROMOTE ENVIRONMENTAL AND CULTURAL STEWARDSHIP, EDUCATION, AND OUTREACH
9	Florida Artificial Reefs	FL										X	X	
10	Florida Fish Hatchery	FL										X	X	
11	Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle	FL										X	X	
12	Shell Point Beach Nourishment	FL											X	
13	Perdido Key Dune Restoration Project	FL			X									
14	Florida Oyster Cultch Placement Project	FL						X						
15	Strategically Provided Boat Access Along Florida's Gulf Coast	FL										X	X	
16	Walton County Boardwalks and Dune Crossovers	FL										X	X	
17	Gulf County Recreation Projects	FL										X	X	
18	Bald Point State Park Recreation Areas	FL										X	X	
19	Enhancements of Franklin County Parks and Boat Ramps	FL										X	X	X
20	Apalachicola River Wildlife and Environmental Area Fishing and Wildlife Viewing Access Improvements	FL										X	X	
21	Navarre Beach Park Gulfside Walkover Complex	FL										X	X	
22	Navarre Beach Park Coastal Access and Dune Restoration	FL										X	X	
23	Gulf Breeze Wayside Park Boat Ramp	FL										X	X	
24	Developing Enhanced Recreational Opportunities at the Escribano Point Portion of the Yellow River Wildlife Management Area	FL										X	X	X
25	Norriego Point Restoration and Recreation Project	FL										X	X	X

	PROPOSED PROJECT	LOCATION	ALTERNATIVE 4											
			ALTERNATIVE 2								ALTERNATIVE 3			
			CREATE AND IMPROVE WETLANDS	PROTECT SHORELINES AND REDUCE EROSION	RESTORE BARRIER ISLANDS AND BEACHES	RESTORE AND PROTECT SUBMERGED AQUATIC VEGETATION	CONSERVE HABITAT	RESTORE OYSTERS	RESTORE AND PROTECT FINFISH	RESTORE AND PROTECT BIRDS	RESTORE AND PROTECT SEA TURTLES	ENHANCE PUBLIC ACCESS TO NATURAL RESOURCES FOR RECREATIONAL USE	ENHANCE RECREATIONAL EXPERIENCES	PROMOTE ENVIRONMENTAL AND CULTURAL STEWARDSHIP, EDUCATION, AND OUTREACH
26	Deer Lake State Park Development	FL										X	X	
27	City of Parker – Oak Shore Drive Pier	FL										X	X	
28	Panama City Marina Fishing Pier, Boat Ramp and Staging Docks	FL										X	X	
29	Wakulla Marshes Sands Park Improvements	FL										X	X	
30	Northwest Florida Estuarine Habitat Restoration, Protection and Education – Fort Walton Beach	FL										X	X	X
¹ These proposed projects would be implemented on federally-managed lands and managed by DOI.														



Phase III Early Restoration Project Locations: Florida

● Restoration Project Site

Beach Enhancement Project at Gulf Islands National Seashore 1 Fort Pickens 2 Santa Rosa 3 Perdido Key 4 Gulf Islands National Seashore Ferry Project Cat Point Living Shoreline 5 South Section 6 North Section Florida Pensacola Bay Living Shoreline Projects 7 Project Greenshores II 8 Sanders Beach Florida Seagrass Recovery Project 9 St. Joseph Bay Aquatic Preserve 10 Alligator Harbor Aquatic Preserve 11 St. Andrews Aquatic Preserve Perdido Key Boardwalk Improvements 12 East Beach 13 West Beach 14 Big Lagoon State Park Boat Ramp Improvement 15 Bob Sikes Pier, Parking, and Trail Restoration Florida Artificial Reef Creation and Restoration 16 Bay County 17 Walton County 18 Okaloosa County 19 Santa Rosa County 20 Escambia County Florida Gulf Coast Marine Fisheries 21 Hatchery/Enhancement Center	Scallop Enhancement for Increased Recreational Fishing Opportunity in the Florida Panhandle 22 Region 1 - Escambia County 23 Region 2 - Okaloosa County 24 Region 3 - Bay County 25 Region 4 - Gulf County 26 Region 5 - Franklin County 27 Shell Point Beach Nourishment 28 Perdido Key Dune Restoration Florida Oyster Cultch Placement 29 Pensacola Bay 30 St. Andrew Bay 31 Apalachicola Bay Strategically Provided Boating Access Along Florida's Gulf Coast 32 Parker 33 Mexico Beach 34 Port Saint Joe 35 Saint Marks 36 Lafayette Creek 37 Panama City Walton County Boardwalks and Dune Crossovers 38 Ed Walline Beach 39 Gulfview Heights 40 Grayton Dunes 41 Dothan Beach 42 Palms of Dune Allen West 43 Bayside Ranchettes Park	Gulf County Recreation Projects 44 Highland View 45 Beacon Hill 46 Windmark Beach 47 Bald Point State Park Recreation Areas Enhancement of Franklin County Parks and Boat Ramps 48 Eastpoint Fishing Pier 49 St. George Island Fishing Pier 50 Waterfront Park 51 Indian Creek Park Apalachicola River Wildlife and Environmental Area Fishing and Wildlife Viewing Access Improvements 52 Sand Beach 53 Cash Bayou 54 Navarre Beach Park Gulfside Walkover Complex Navarre Beach Park Coastal Access and Dune Restoration 56 Gulf Breeze Wayside Park Boat Ramp Developing Enhanced Recreational Opportunities on the Escribano Point Portion of the Yellow River 57 Wildlife Management Area 58 Norriego Point Restoration and Recreation Project 59 Deer Lake State Park Development 60 City of Parker - Oakshore Drive Pier Panama City Marina Fishing Pier, Boat Ramp, and Staging Docks 62 Wakulla County Mashas Sands Park Improvements Northwest Florida Estuarine Habitat Restoration, Protection and Education- Fort Walton Beach 63
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Figure 12-1. Locations of Proposed Phase III Early Restoration Projects in Florida.

12.2 Beach Enhancement Project at Gulf Islands National Seashore: Project Description

12.2.1 Project Summary

This project involves removing fragments of asphalt and road-base material (limestone aggregate and some chunks of clay) that have been scattered widely over the Fort Pickens, Santa Rosa, and Perdido Key areas of the Florida District of Gulf Islands National Seashore, managed by the National Park Service, and replanting areas, as needed, where materials are removed. These materials originated from roads damaged during several storms and hurricanes. The asphalt- and road-base-covered conditions are clearly unnatural and impact the visitor experience both aesthetically and physically in these National Seashore lands. This project would enhance the visitor experience in the cleaned-up areas. The exact method for removing the material would be left to the contractor hired if the project is approved, but would involve primarily mechanized equipment, supplemented by small crews using hand tools. The estimated cost for this project is \$10,836,055.

12.2.2 Background and Project Description

As noted above, this proposed project would take place in the Fort Pickens, Santa Rosa, and Perdido Key areas of the Florida District of Gulf Islands National Seashore (see Figure 12-2 below). The materials designated for removal originated from roads damaged during several storms and hurricanes since 1995 and were spread over an area of barrier island habitat hundreds of acres in size and over 14 miles long (see Figure 12-3 and Figure 12-4). These materials are found in both vegetated and un-vegetated areas and in both flat open beaches and dune areas. Additionally, there is also a small, two-mile-long area on the Gulf side of the Fort Pickens area where sections of the old road and some miscellaneous chunks of concrete may exist in the intertidal and subtidal zones where visitors sometimes walk, wade, and swim. Fragments and materials range in shape and size from large slabs down to brick- and pea-size (i.e., from approximately 10 feet in size down to a quarter of an inch).

Over the years, areas covered with materials have been observed by Seashore staff. Rough maps have been created to locate these areas, which total approximately 400 acres. In reality, however, these materials could exist over a much greater area. This is due to the highly dynamic nature of the area such that, since these observations were made, wind and water have been continually uncovering and moving these materials over an area as great as approximately 2,041 acres. This includes 1,303 acres over 7.3 miles in the Santa Rosa area, 631 acres over 5.0 miles in the Fort Pickens area, 99 acres over 2.0 miles in the Perdido Key area (west of Fort Pickens, across the mouth of the bay), and approximately eight acres in the intertidal and subtidal zones on the Gulf side of the Fort Pickens area (see Figure 12-5, Figure 12-6 and Figure 12-7). The extent to which cleanup would occur over all these areas is unknown, but would depend on how much cleanup could occur with the project funding available. Therefore, in the environmental compliance documents for this project, consultations requested and impacts analyzed are for cleanup activities over the entire 2,041 acre area.

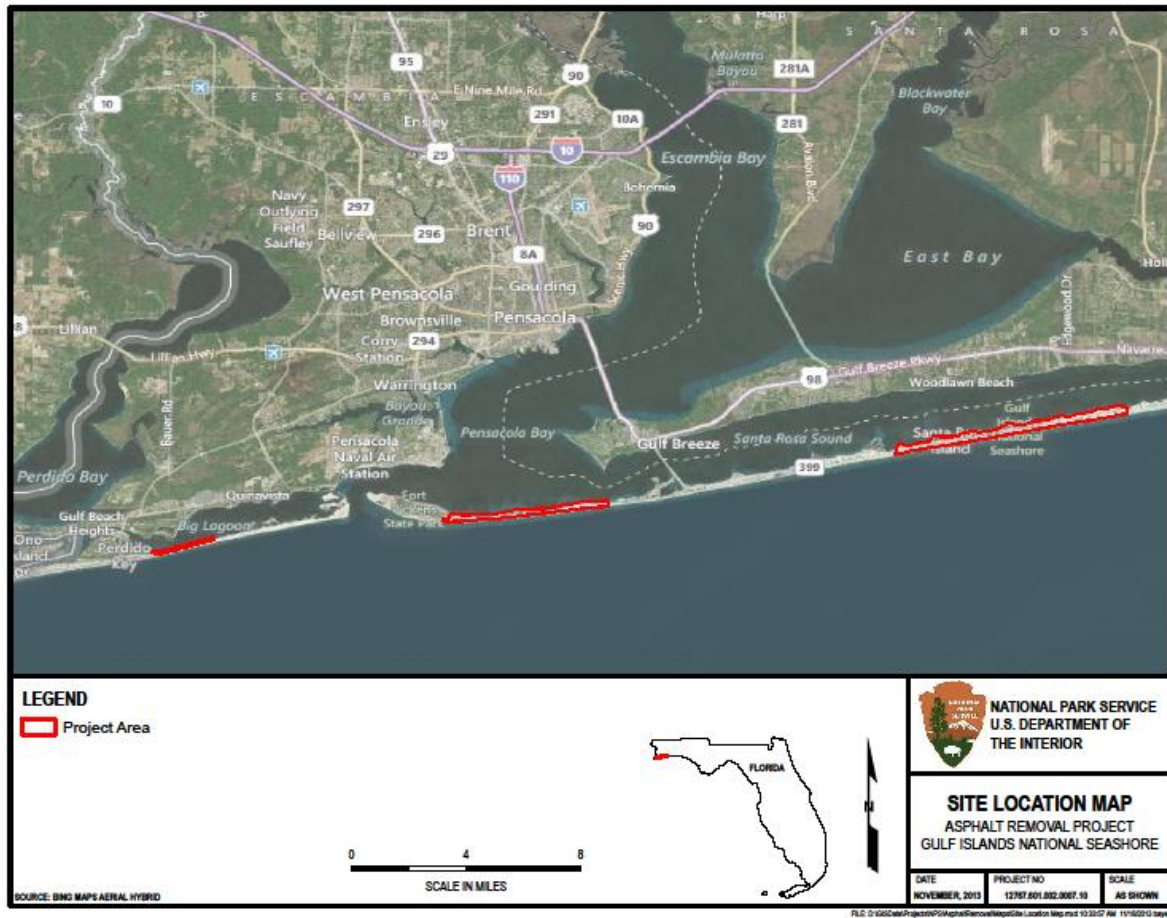


Figure 12-2. Asphalt removal project boundaries (outlined in red).



Figure 12-3. Asphalt fragments and road-base materials.



Figure 12-4. Asphalt fragments, road-base material, and a remnant road.



Figure 12-5. Potential project area (bounded by red line) of 1,303 acres at Santa Rosa area.



Figure 12-6. Potential project area (bounded by red line) of 631 acres at Fort Pickens area (in-water project area bounded by black diamonds).



Figure 12-7. Potential project area (bounded by red line) of 99 acres at Perdido Key area.

Based on initial observations made by Seashore staff over the years, the majority of the land area proposed to be cleaned is assumed to have materials only at the surface (0-3 inches). A smaller area – perhaps 100-200 acres – is assumed to have materials up to approximately six inches deep; an even smaller area – perhaps 10-20 acres – is expected to have materials up to three feet deep. A very small area – perhaps 5-15 acres – is expected to have materials several feet deep, including, possibly, the intertidal and subtidal zones at the Fort Pickens area. Buried materials may be removed to the extent practical to ensure that these materials do not “daylight” in the future due to wind or water erosion.

12.2.2.1 Timelines and Methodology

Cleanup activities on land would occur seven months each year during the late summer, fall, and winter months when disturbance of visitors would be minimal. Cleanup activities would *not* occur between March 15 and August 15 since this is the height of the bird nesting season and most of the sea turtle nesting season. Outside of these dates, no work would occur in areas where bird or turtle nests remain. Effects to threatened and endangered species and their critical habitats, along with measures to mitigate these effects, have been addressed in consultations with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). Endangered Species Act Section 7 consultations were completed with USFWS on November 1, 2013 (Imm 2013) and with NMFS on March 12, 2014

(Crabtree, 2014) . Cleanup activities on land are expected to take up to four years, and re-planting (see below) up to three years, making total project duration approximately five years. Cleanup activities in-water would occur four months each year during the late fall and winter months to prevent disturbance of nesting and hatching sea turtles. Cleanup activities there would *not* occur between March 15 and Nov. 15. Additionally, no clean-up would take place outside these dates in areas where bird or turtle nests persist. Depending on how widely the materials are found to be distributed, how long it takes to clean them up, and the actual cleanup costs, the area cleaned could be as small as approximately 50 acres per seven-month year, or as large as approximately 300 acres per seven-month year.

The method for removing the material would involve primarily mechanized equipment, supplemented by small crews using hand tools. Mechanized equipment such as dump trucks, roll-off dumpsters, backhoes, tractors with sifters and front-end loaders, and “pushable” sifters could be used. Hand tools such as rakes, shovels, scoops, buckets, screens, etc. would also be used by crews in sensitive areas (e.g. wetlands, dunes and densely vegetated areas, near nests or burrows, etc.). This equipment would be staged in the parking lots nearest the work area. Access to areas to be cleaned would be via the parking lots and road, as long as vegetated dunes would not be crossed and damaged in the process.

The on-land sand-asphalt-fragment-road-base mixture would be sifted in place. However, in some areas up to three-foot mounds of asphalt fragments (and sand) exist (typically by the side of the road in certain areas); in these areas it may be gathered and temporarily stockpiled at a nearby parking lot (i.e. staging area) and sifted. In this case the clean sand would then be re-deposited back at the original site. The separated asphalt and road base material would be disposed of at a nearby landfill and/or taken to a nearby recycling facility, both off-site.

The mechanized equipment would be used in un-vegetated areas (un-vegetated landscapes dominate the areas to be cleaned). Areas that are vegetated (e.g., dunes and beach mouse habitat) would either not be cleaned or would be cleaned using hand tools. Large mechanized equipment would avoid dunes by at least 10 feet from the toe of the dune (could be less at designated access points where a narrow break in the dune occurs). Smaller mechanized equipment, e.g. pushable sifters, could be used up to the toe of a dune. Much of the proposed project area is sparsely vegetated. In these areas, resource managers would determine whether or not the vegetation is dense enough to warrant avoiding with mechanized equipment and treating with hand tools instead. If it isn't, then mechanized equipment would be used, resulting in the removal of vegetation at that location. It is assumed that approximately 10% of the total area to be mechanically cleaned contains vegetation that would be destroyed in the cleanup process. Re-planting these areas with like numbers and like species of plants is planned as part of this project. This re-planting work could include removing and preserving plants before cleaning an area and replanting them afterwards.

Additional activities to support re-planting include collection of plant cuttings or seeds, plant propagation, delivery and installation of plant material, and protection, monitoring, and re-planting if needed. Assuming a normal transplant density of 21,000 plants per acre, a 10% density of plants in the areas cleaned, and several hundred acres cleaned, this could likely result in several hundred thousand plants being re-planted into the cleaned areas.

For the small, eight-acre area where removing asphalt and some concrete could occur in the intertidal and subtidal zones, work would only occur during the fall and winter months to prevent disturbance to nesting and hatching sea turtles. No work would occur between March 15 and November 15. A large backhoe with a long arm and bucket (or grapple) on the end would be used. No work would be done from boats or barges. The backhoe would operate near the mean low water (MLW) line and reach out perhaps five-to-fifteen feet – but no more than 20 feet – to retrieve materials. Depth of removal from these zones is not known but would be determined based on technical feasibility, cost effectiveness, and, using best professional judgment, the likelihood of the materials becoming uncovered in the reasonably near future – e.g., in the 0-3 feet deep range. Sand would also be scooped up with the pieces of asphalt or concrete and would be deposited on the beach just above the surf line where the pieces – and incidental amounts of sand only – would be taken off-site and disposed of. Remaining sand would be returned to the intertidal zone where it was removed from to the extent reasonably possible. As such, only negligible amounts of sand would be removed from the intertidal zone.

12.2.3 Evaluation Criteria

This proposed project meets the evaluation criteria established for OPA and the Framework Agreement. The project would enhance the public's use and/or enjoyment of natural resources by removing asphalt and other foreign materials from beaches and dunes, helping to offset adverse impacts to recreational uses at the Seashore caused by the Spill. Thus, the nexus to resources injured by the Spill is clear (see C.F.R. § 990.54(a) (2) and Sections 6a-6c of the Early Restoration Framework Agreement).

In addition to enhancing the public's use and enjoyment of natural resources, the project would benefit terrestrial vegetation and terrestrial habitat. Accordingly, the project also benefits more than one resource and/or service. See 15 C.F.R. § 990.54 (a)(5). The project is technically feasible and utilizes proven techniques with established methods and documented results (personal communication, Mark Nicholas, 2013) and can be implemented with minimal delay. Government agencies have successfully implemented similar beach cleaning projects in the region. For these reasons, the project has a high likelihood of success. See C.F.R. § 990.54(a)(3) and Section 6e of the Early Restoration Framework Agreement.

A thorough environmental review, including review under applicable environmental statutes and regulations, is described in section 12.2.5; that review indicates that adverse effects from the project would largely be minor, localized, and often of short duration. In addition, the best management practices and measures to avoid or minimize adverse effects described in 12.2.5 would be implemented. As a result, collateral injury would be avoided and minimized during project implementation (15 C.F.R. § 990.54(a)(4)).

Cost estimates are based on similar past projects, and based on these estimates the project can be conducted at a reasonable cost. See C.F.R. § 990.54(a)(1). As a result, the project is considered feasible and cost effective. The project is not inconsistent with long-term restoration needs. (See C.F.R. § 990.54(a)(1),(3), and Sections 6d-6e of the Early Restoration Framework Agreement).

12.2.4 Performance Criteria, Monitoring and Maintenance

The restoration objective of this project is to restore a portion of the lost visitor use of the Seashore caused by the Spill by improving the future visitor experience there. This would be accomplished by improving the appearance of the Seashore and the public's enjoyment of use of the Seashore. The

aesthetic and physical improvements would improve the visitors' experience by keeping them from walking on or swimming among the asphalt and road-base materials. The project would be deemed successful when observation shows road materials have been removed and replanted areas established. As such, performance criteria for this project are the removal of the materials from an area and the short-term survival (i.e., 80% after 90 days) of replanted vegetation. Each of these criteria can be easily monitored and confirmed through visual observation. To confirm materials have been removed from an area, monitoring would occur immediately after an area has been cleaned, and then again some days, weeks, or months later in case wind or water uncovers additional materials or in case storm overwash events have redistributed materials back into the same areas or into new areas. Additionally, visitor use would be monitored using existing Seashore protocols for the gathering and evaluation of visitor feedback, including the routine use of visitor comment card surveys..

Monitoring plant survival at replanted areas would likely occur three months after planting to confirm that the percent-survival performance criterion (at least 80%) is met.

No long-term maintenance activities beyond the five-year duration of this project are expected for this project and are not budgeted.

12.2.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for the proposed recreational use project. NRD Offsets are \$21,672,110 expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured on DOI lands in Florida, which would be determined by the Trustees' assessment of lost recreational use for the Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.²

12.2.6 Cost

The total estimated cost to implement this project is \$10,836,055. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning, design, implementation, monitoring, and potential contingencies.

² For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.3 Beach Enhancement Project at Gulf Islands National Seashore: Environmental Review

The proposed beach enhancement project involves removing fragments of asphalt and road-base material that have been scattered widely over the Fort Pickens, Santa Rosa, and Perdido Key areas of the Florida District of the Seashore.

12.3.1 Introduction and Background

This project is consistent with Alternative 3, “Contribute to Providing and Enhancing Recreational Opportunities”, and more specifically, “Enhance Recreational Experiences.” The alternative incorporates multiple project types to address an important type of injury caused by the Spill: lost and degraded recreational use of Gulf resources. This project involves enhancing recreational experiences through reducing and removing land-based debris. Land-based debris can be disturbing and disruptive to recreational activities and aesthetic experiences like beach going, hiking, and general sightseeing. Removal of debris not only restores the natural beauty of the coastal environment for visitors to enjoy, but also removes debris that is potentially harmful to humans and wildlife.

See Sections 12.1.2 and 12.1.2.1 for detailed introductory and background information for this project.

12.3.2 Project Location

The Seashore is located in Florida (Escambia, Santa Rosa, and Okaloosa counties) and Mississippi (Jackson and Harrison counties). Covering more than 14 miles of Santa Rosa Island, the proposed project is located at the Fort Pickens, Santa Rosa, and Perdido Key Areas of the Seashore, near Pensacola Beach in Escambia County, Florida (see Figure 12-2 above).

12.3.3 Project Scope

This project involves removing fragments of asphalt and road-base material (limestone aggregate and some chunks of clay) that have been scattered widely over the Fort Pickens, Santa Rosa, and Perdido Key areas of the Florida District of Gulf Islands National Seashore, managed by the National Park Service. These materials originated from roads damaged during several storms and hurricanes. Debris removal methods would involve primarily mechanized equipment, supplemented by small crews using hand tools. For details see Section 12.1.2.1. Work would be contracted, and exact methods for cleanup would be identified at that time. The following environmental analysis and the extent to which cleanup would occur over all these areas is unknown, but would depend on how much cleanup could occur with the project funding available. Therefore, in the environmental compliance documents for this project, consultations requested and impacts analyzed are for cleanup activities over the entire 2,041 acre area. Consultation also analyzes maximum use of equipment and other cleanup activities as the exact areas where each type of activity could be utilized are not known yet.

The locations of proposed removal of asphalt and other road based materials from the project area can be found in Figure 12-2 above. Cleanup activities are expected to take up to four years, and re-planting up to three years, making the total project duration approximately five years. Depending on how widely the materials are found to be distributed, how long it takes to clean them up, and what actual cleanup costs end up being, the area cleaned could be as small as approximately 50 acres per seven-month year, or as large as approximately 300 acres per seven-month year.

12.3.4 Operations and Maintenance

No operations or maintenance activities are anticipated as a result of this project once beach enhancement activities are completed. Materials would be removed as current project funding allows.

12.3.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects of their actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected resources and environmental consequences of the project.

12.3.5.1 No Action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected resources subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.3.5.2 Physical Environment

12.3.5.2.1 Geology and Substrates

Affected Resources

The proposed project areas in Fort Pickens, Santa Rosa, and Perdido Key all consist predominantly of sand that has formed as the supratidal open beach and dunes and is the substrate in the intertidal and subtidal areas. Island and shoreline ridge deposits are largely devoid of clay and silt because these sand formations were deposited by wind after ocean currents transported the parent material. For example, Santa Rosa Island is composed of approximately 99% medium grained quartz sand (NPS 2011c). Perdido Key and Santa Rosa Island, including the project areas, like all barrier islands, are a product of natural functions such as erosion/accretion and overwash. The islands migrate to the west through the daily process of alongshore drift and to the north during extreme storm events through overwash. Barrier islands migrate relative to sea level and the energy dynamics of the system through the redistribution of sand. Studies at the Seashore have shown that the volume of sand on the island remains relatively stable; it is just redistributed to the north. From a geological standpoint, it is critical to the long-term survival of the barrier island to allow these processes to continue (NPS 2006).

Following hurricane impact, these same natural functions serve to rebuild the structure of the island. The island is fronted by a low-elevation beach berm that develops following a hurricane and can be overtopped by elevated water levels during strong frontal storms. Overwash during these storms is part of the post-hurricane recovery of the barrier island. The sediment deposited in these overwash fans is important to the recovery of the dunes and the vertical structure of the island. The dune system redevelops from and within the overwash sediments and through sediment delivery under fair-weather conditions. Overwash during both extreme and frontal storms is a strong control on the ecological makeup and diversity of the island, and any impedance to overwash would not only alter the post-hurricane topography but also the ecology (Houser and Oravetz 2006).

Environmental Consequences

Possible impacts from this project include compaction, erosion, and topographical changes. The removal of asphalt and other road-based materials would not cause compaction in the open beach or dune areas due to the wide wheels or tracks that must be used in the sand and the inherently low compactibility of sand. Compaction in the intertidal zone where larger equipment could be possible since moisture makes the sand there more compactable. Impacts would be short-term and minor, however, due to the constant wave and tidal action in that area that would rapidly re-work the sand profile back to a natural condition. Beneficial effects on compaction are expected in all areas where these hard, dense road materials are removed and the sand is returned to its natural state.

Impacts from the project on erosion and topography are not expected in the open beach or dunes areas. In the one small area – roadside berms where old asphalt piles could be up to three feet deep – it is possible that this substrate would not be sifted in place, but rather scooped up and removed to a nearby location (e.g. parking lot), sifted there, and the remaining sand returned to its original location. The only impact on topography here would be short-term (< 24 hours) and minor while the material is gone, but beneficial once it is returned and is restored to its natural (lower) height. Also, beneficial effects on erosion and topography over the entire supratidal project area are expected in the long-term since removing these foreign materials would allow more plant growth; more plant growth, in turn, traps moving sand (from wind or water) and actually lessens erosion and promotes accretion and natural dune-building processes. In the event that a backhoe is used to remove asphalt in the intertidal and subtidal zones, an increase in erosion potential would occur and sand could be redistributed locally via waves. Additionally, as foreign materials are scooped out of these zones, sand would be scooped up also, creating a hole or depression. Once this mix of sand and foreign materials is separated on the beach and the sand is returned to the spot it came from, and natural wave and tidal action works these areas, impacts would be highly localized, short-term, and therefore minor.

Additional beneficial impacts from this project include the restoration of color, consistency, and temperature of the sands back to near natural conditions.

12.3.5.2.2 Hydrology, Water Quality, and Floodplains

Affected Resources

Although the great majority of the project area is devoid of surface water resources, some do exist. However, due to the ephemeral nature of nearly all of the surface water features in the project area, there is no current and accurate inventory of them. It is known, however, that brackish ponds, lagoons, and freshwater marshes are located in permanently flooded to intermittently exposed wetland depressions and occur sparsely across the project area. This community type is generally found in freshwater environments. In some cases, where lagoons are connected to the sound or ocean, where frequent overwash occurs, where residual concentrations of salts exist in the base soils, or where salt water intrudes into the groundwater, water may be brackish. This community's habitat is usually formed during severe storm overwash events such as during hurricanes when the storm surge rushing across the islands scours and gouges out depressions. These depressions subsequently fill with fresh or brackish water creating ponds and lagoons (NPS 2011c). The Santa Rosa area has many "swales". These are often ephemeral in nature and form during wet years. The Fort Pickens area has the 3 perennial ponds just north of the road, and another ephemeral wet area by parking lot 21 (GUIS staff, personal

communication, 2013). Lagoons and other surface water features are believed to occur on the Perdido Key and Santa Rosa areas.

The relatively high water table and associated lateral seepage through the coarse sandy soils is the primary source for the water that fills and maintains these wet depressions. Frequent rains also play an important role in recharging water levels in these depressions and providing an additional fresh water source. Water depths tend to be relatively shallow, averaging 1 to 3 feet deep, although depths as much as 9 feet have been observed in some ponds (NPS 2011c).

Because of the dynamic nature of barrier islands, these water features tend to constantly change and in many cases are short lived (NPS 2011c).

There are no known freshwater rivers, streams, or springs in the project area (GUIS staff, personal communication, 2013).

The great majority of the project area is devoid of water resources.

In addition to groundwater and surface waters, the entire project area is classified as a coastal floodplain and therefore falls under the requirements of Executive Order 11988 (Floodplain Management) and the NPS Procedural Manual 77-2.

Environmental Consequences

There would be no impacts from this project to on-island surface water or groundwater hydrology. This is primarily because there are so few on-island water resources, but also, for those that exist (e.g. permanent brackish ponds and lagoons or ephemeral ponds/swales), equipment would stay out of and a safe distance (to be determined, but at least 10 ft.) from them. Groundwater would not be impacted from this project since it is below typical asphalt removal depths. Where it is not – e.g., near ephemeral freshwater wetlands where groundwater is extremely shallow – these areas would be avoided by equipment.

There would be no impacts from this project to on-island water quality. This is primarily because there are so few on-island water resources, but also, for those that exist (e.g. permanent brackish ponds and lagoons or ephemeral ponds/swales), equipment would stay out of and a safe distance (to be determined, but at least 10 ft.) from them. Very minor long-term beneficial effects on groundwater quality are expected from the removal of the asphalt and any hydrocarbons or other compounds that may still be leaching out of these materials into the water table.

As described earlier, this project could require some removal work in the intertidal and sub-tidal zones of the Gulf and, as such, could create some turbidity there. It is anticipated that all impacts to turbidity would be short-term in nature occurring only during removal activities. Increases in turbidity are not expected to be substantial, however, since background levels of subtidal turbidity are high in this area anyway due to wave action. Additionally, BMPs along with other avoidance, mitigation and permit conditions required by state and federal regulatory agencies would be used to minimize water quality and sedimentation impacts. As such, impacts to water quality in this area would be minor. Very small long-term beneficial impacts to water quality are expected from the removal of the asphalt and any hydrocarbons or other compounds that may still be leaching out of these materials into the water.

There would be no impacts to water quality in Santa Rosa Sound or Pensacola Bay since asphalt removal would not take place there.

For the in-water portion of this project, the proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (USACE) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). These activities would occur where asphalt and possibly concrete chunks are removed from the inter-tidal and subtidal zones. The Jacksonville Corps District was contacted in 2013 for a preliminary discussion of the permitting process. Continued coordination with USACE and final authorization pursuant to CWA/RHA will be completed prior to project implementation.

Although the entire project area is designated as a coastal floodplain, a Floodplain Statement of Findings (per Procedural Manual 77-2) is not required for this project since: a) no development (structures, facilities, topographic alterations, etc.) would occur there and therefore no staff or visitors would be put at an increased safety risk; b) no modifications would be made that would either adversely affect the natural resources and functions of the floodplain or increase flood risks; and c) this project would help restore natural floodplain values in this area by removing the foreign materials and allowing more natural flow of water over land during flood events. As such, this project is in compliance with NPS Director's Order #77-2: Floodplain Management.

12.3.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

In Table 12-2, below, both State of Florida and federal primary ambient air quality standards for criteria air pollutants are presented.

The USEPA proposed strengthening the air quality standards for ground-level ozone to 0.075 ppm in 2008. To attain this standard, the three-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. The 2006 to 2008 average of the fourth-highest daily maximum 8-hour ozone concentration for Pensacola was 0.079 ppm, and thus Escambia County would be designated as nonattainment according to the proposed 2008 ozone standard (USEPA 2009a).

Available monitoring data from 2003 to 2007 were used to estimate air quality parameters for the Seashore as part of the *Air Quality in National Parks 2008 Annual Performance and Progress Report*. The five-year average of the annual fourth-highest 8-hour ozone concentrations at the Seashore was determined to be greater than or equal to 0.076 ppm, and the Seashore was assigned the status of significant concern with an improving trend (NPS 2011a).

Escambia County, Florida has an annual fine-particle particulate matter (PM) concentration of 8.4 $\mu\text{g}/\text{m}^3$, which meets the national standard of 12 $\mu\text{g}/\text{m}^3$, and is slightly better than the national average of 9.20 $\mu\text{g}/\text{m}^3$. It also has an annual average sulfur dioxide concentration of 14 ppb, which meets the national sulfur dioxide standard of 75 ppb, and is slightly better than the national average of 19.00 ppb. There is currently no data available for Escambia County regarding carbon monoxide, nitrogen oxide, or lead levels (<http://air-quality.findthedata.org/l/159/Escambia-County>, 2013).

Additionally, there is no trend analysis data is available for visibility, ammonium, nitrate, or sulfate parameters for the Seashore (NPS, 2013).

In 2013, Escambia County was in attainment of the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants as designated by the USEPA.

Table 12-2. State and Federal Ambient Standards for Criteria Air Pollutants.

POLLUTANT	AVERAGING PERIOD	FEDERAL PRIMARY STANDARD	STATE OF FLORIDA STANDARD
Ozone	8-hour	0.075 ppm	Same as Federal
	1-hour (daily max.)	0.12 ppm	Same as Federal
PM2.5	Annual (arithmetic mean)	15.0 $\mu\text{g}/\text{m}^3$	Same as Federal
	24-hour	35 $\mu\text{g}/\text{m}^3$	Same as Federal
PM10	Annual (arithmetic mean)	NA	50 $\mu\text{g}/\text{m}^3$
	24-hour	150 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$
Carbon Monoxide	8-hour	9 ppm	9 ppm
	1-hour	35 ppm	35 ppm
Nitrogen Dioxide	Annual (arithmetic mean)	0.053 ppm	0.05 ppm
	1-hour	0.100 ppm	Same as Federal
Sulfur Dioxide	Annual (arithmetic mean)	0.03 ppm	0.02 ppm
	24-hour	0.14 ppm	0.10 ppm
	1-hour (per annum)	NA	0.40 ppm
	1-hour (per 7 days)	NA	0.25 ppm
	5-minute	NA	0.80 ppm
Lead	Rolling 3-month average	0.15 $\mu\text{g}/\text{m}^3$	Same as Federal
	Quarterly average	1.5 $\mu\text{g}/\text{m}^3$	Same as Federal
Total Suspended Particulate	Annual (geometric mean)	NA	60 $\mu\text{g}/\text{m}^3$
	24-hour	NA	150 $\mu\text{g}/\text{m}^3$

In addition, under the terms of the 1990 CAA amendments, the Seashore is designated as a Class II airshed. By definition, Class II areas of the country are set aside for protection under the CAA. Protection is somewhat less stringent than in Class I areas. The primary means by which the protection and enhancement of air quality are accomplished are through implementation of NAAQS (NPS 2008). These standards address six pollutants known to harm human health: ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxides (NPS 2008). Under Class II, modest increases in air pollution are allowed beyond baseline levels for particulate matter, sulfur dioxide, nitrogen, and nitrogen dioxide, provided the NAAQS are not exceeded (NPS 2008).

Greenhouse Gases (GHGs) are chemical compounds found in the Earth's atmosphere that absorb and trap infrared radiation as heat. Global atmospheric GHG concentrations are a product of continuous emission (release) and removal (storage) of GHGs over time. In the natural environment, this release and storage is largely cyclical. For instance, through the process of photosynthesis, plants capture atmospheric carbon as they grow and store it in the form of sugars. Human activities such as

deforestation, soil disturbance, and burning of fossil fuels disrupt the natural cycle by increasing the GHG emission rate over the storage rate, which results in a net increase of GHGs in the atmosphere. The principal GHGs emitted into the atmosphere through human activities are CO₂, methane, nitrous oxide, and fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (USEPA 2010). CO₂ is the major GHG emitted, and the burning of fossil fuels accounts for 81 percent of all U.S. GHG emissions (USEPA 2010). Currently GHG emissions are not monitored or collected at the Seashore.

Environmental Consequences

Project implementation would require the use of heavy equipment which would temporarily affect air quality in the immediate project vicinity due to construction vehicle emissions. Fine particulate matter associated with the removal of asphalt and other road base materials and the replacement of sand may become temporarily airborne during project implementation. Any adverse air quality impacts that would occur would be localized, short-term, and minor.

The use of gasoline and diesel-powered construction vehicles and equipment, including cars, trucks, and backhoes, would contribute to an increase in GHG emissions. Estimated construction equipment and use and subsequent emissions for the proposed project are detailed in Table 12-3.

Table 12-3. Greenhouse gas emissions of the proposed project.

VESSEL/CONSTRUCTION EQUIPMENT AND PROJECTED NUMBER	NO. OF HOURS OPERATED³	CO₂ (METRIC TONS)⁴	CH₄ (CO₂E) (METRIC TONS)⁵	NOX (CO₂E) (METRIC TONS)	TOTAL CO₂E (METRIC TONS)
Bulldozer (1) ⁶	1,800	684	0.36	0.36	684.72
Backhoe (3) ⁷	1,800	1,890	1.08	1.08	1,892.16
Dumptruck (1) ⁸	1,800	612	0.36	0.36	612.72
TOTAL					3,189.60

Based on the assumptions described in the table above, and the small scale and short duration of the proposed project, predicted greenhouse gas emissions would be short-term and minor and would not exceed the 25,000 metric tons per year put forth by the Council on Environmental Quality (CEQ) as a level above which to conduct a detailed analysis of said emissions (CEQ, 2010). Therefore, the project would have only short-term minor impacts on GHG emissions.

³ Emissions assumptions for all equipment based on 10-hour days of operation, 6 days a week per piece of equipment over a 7-month construction period.

⁴ CO₂ emissions assumptions for diesel and gasoline engines based on USEPA 2009b.

⁵ CH₄ and NOx emissions assumptions and CO₂e calculations based on USEPA 2011.

⁶ Current construction estimates indicate two Bobcats, however, existing GHG emissions are not available for Bobcats therefore it was assumed that GHG emissions for two Bobcats would be similar to those of one bulldozer

⁷ GHG emissions data is not available for tractors, and it was assumed that tractors would have similar GHG emissions to backhoes.

⁸ Construction equipment emission factors based on USEPA NONROAD emission factors for 250hp pieces of equipment. Data was accessed through the California Environmental Quality Act Roadway Construction Emissions Model.

12.3.5.2.4 Noise

Affected Resources

Noise can be defined as unwanted sound, and noise levels and impacts are interpreted in relationship to its effects on nearby residents or organisms. Noise associated with recreational land uses, such as boating, can be of concern to surrounding communities. Noise also emanates from vehicular traffic associated with project sites during construction. Ambient noise (the existing background noise environment) can be generated by a number of noise sources, including mobile sources, such as airplanes, automobiles, trucks, and trains; and stationary sources such as construction sites, machinery, or industrial operations. The Noise Control Act of 1972 (42 U.S.C. 4901 to 4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Table 12-4 presents some familiar sounds and their decibel levels. Table 12-5 presents noise levels produced by typical construction equipment.

Table 12-4. Familiar sounds and their decibel levels (dB).

SOUND	DECIBEL LEVEL (DB)
Whisper	30
Normal Conversation	50-65
Vacuum cleaner at 10 feet	70
Midtown Manhattan Traffic Noise	70-85
Lawnmower	85-90
Train	100
Nearby Jet Takeoff	130
Source: Occupational Safety and Health Administration 2012	

Table 12-5. Noise levels produced by typical construction equipment.

TYPE OF EQUIPMENT	MAXIMUM LEVEL (DBA) AT 50 FEET
Road Grader	85
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Crane	85
Combined Equipment	89
Source: Thalheimer (1996).	

For the in-water portion of the project, asphalt slabs and concrete chunks may be broken up in the water if they can't be removed and broken up on land. This would cause impulsive noises that could be somewhere in the range of 154-196 dB re:1 uPa zero-to-peak level and 176 dB re:1 uPa RMS level (Laughlin, 2006). Impact hammers in the open air could have sound levels in the range of 93–98 dBA (Laughlin, 2007b).

The primary sources of ambient (background) noise in the project area are operation of vehicles, commercial and recreational vessels, the nearby Pensacola Airport, and natural sounds such as wind, surf, and wildlife. The levels of noise in the project area varies, depending on the season and/or the time of day, the number and types of sources of noise, and distance from the sources of noise. Noise levels in the project area are primarily from commercial and recreational vessels, and vehicles on Highway 399. Noise levels fluctuate with highest levels usually occurring during the spring and summer months due to the increased boating and coastal beach activities.

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. Noise-sensitive land uses in the project area include residences and beach recreationists, although for most of the work residences would be over a mile away and recreationists would be much fewer in the late summer/fall/winter months when this project would be implemented.

In-water work activities contribute to noise in the underwater environment and are a concern for both the NMFS and the USFWS. There are numerous contributing sources to background marine sound conditions, including those from marine mammals (71 dB), lightning strikes (260 dB), waves breaking, and rain on the open surface and by human or mechanical sources including recreational activities and boating (150-195 dB). These levels are maximum source levels. Although there are many sources of noise in the underwater environment, the most common sources of noise associated with construction activities are via hammering. Impulsive noises like this have short duration and consist of a broad range of frequencies (CRS Report 96-603). Similar to above-ground noise, underwater noise levels fluctuate in the project area with the greatest impacts coming during the spring and summer months due to increased human presence, increased boating and coastal beach activities.

Environmental Consequences

Instances of increased noise are expected during the removal of asphalt and other road base materials. Although construction noise could last on-land as long as seven months per year for four years, it would be remote (away from residences), and it would occur primarily in the off-season for recreationists. As such, impacts to humans during project implementation would be short-term and minor.

Noise is expected to disturb terrestrial wildlife, including birds and mammals in the project area. Although wildlife would be able to avoid noisy areas and the project would occur during a part of the year when biological activity in the project area is generally low, impacts are expected to be short-term and moderate.

Mitigation measures that could limit noise during on-land activities include: limiting activity at project sites to daytime hours (dawn to dusk); promoting awareness among contractors that producing prominent discrete tones and periodic noises (e.g., excessive dump truck gate banging) should be avoided as much as possible; limiting activity to time periods for visitor use of the site is at its lowest (i.e. late summer, fall and winter; Monday through Friday, possibly Saturday, not Sunday); and possibly employing noise-controlled construction equipment to the maximum extent possible.

Regarding underwater noise, if the backhoe bucket or grapple is used to break up asphalt or concrete pieces in the water by striking it, momentary sounds could exceed both the 160 dB re 1 uPa RMS level for impulsive noise and the 180 dB re 1 uPa zero to peak level. Also, if the backhoe is parked with its

tracks (or wheels) in the water, the 120 dB re 1uPA RMS level could be exceeded from engine noise. Mitigation measures would include breaking up large pieces on land (rather than in-water) whenever possible, and keeping the backhoe vehicle itself out of the water as much as possible. Also, although the window of time for in-water cleanup activities is four months per year for four years, it is expected to only take a total of two months. Additionally, the shallowness of the water in this area should have a dampening effect on any project-generated underwater noise. With these caveats in mind, and also the short term and localized nature of this activity, impacts to underwater sound would be minor.

12.3.5.3 Biological Environment

12.3.5.3.1 Living Coastal and Marine Resources

Coastal and Submerged Aquatic Vegetation

Affected Resources

Seagrass

No seagrass occurs in the areas where asphalt will be removed.

Terrestrial Vegetation

Terrestrial vegetation occurring in the project area is typical of a barrier island dune-and-open-beach environment. Primary plant associations occurring in the project area include sea oats (*Uniola paniculata*), beach panic grass (*Panicum amarum*), and beach elder (*Iva imbricata*) (Seashore staff, personal communication, 2013). Densely vegetated areas in the project area can be seen in Figure 12-8, Figure 12-9, and Figure 12-10 below. There are approximately 67 acres of dense vegetation at the Fort Pickens area, approximately 225 acres at the Santa Rosa area, and approximately eight acres at the Perdido Key area. These are areas where mechanized equipment will not be allowed during the project. No federally protected plant species are present within any of the project areas.

Wetlands exist in the project area along the Pensacola Bay and include estuarine and marine deepwater, estuarine and marine wetland, freshwater emergent wetland, and freshwater forested/shrub wetland (NPS 2006). Wetlands located in the project area can be seen below in Figure 12-11, Figure 12-12, and Figure 12-13 (Note: due to the ephemeral and dynamic nature of many of these wetlands, these maps may not be entirely accurate). The intertidal zone marked in Figure 12-11 is also classified as wetland.



Figure 12-8. Fort Pickens area – dense vegetation.

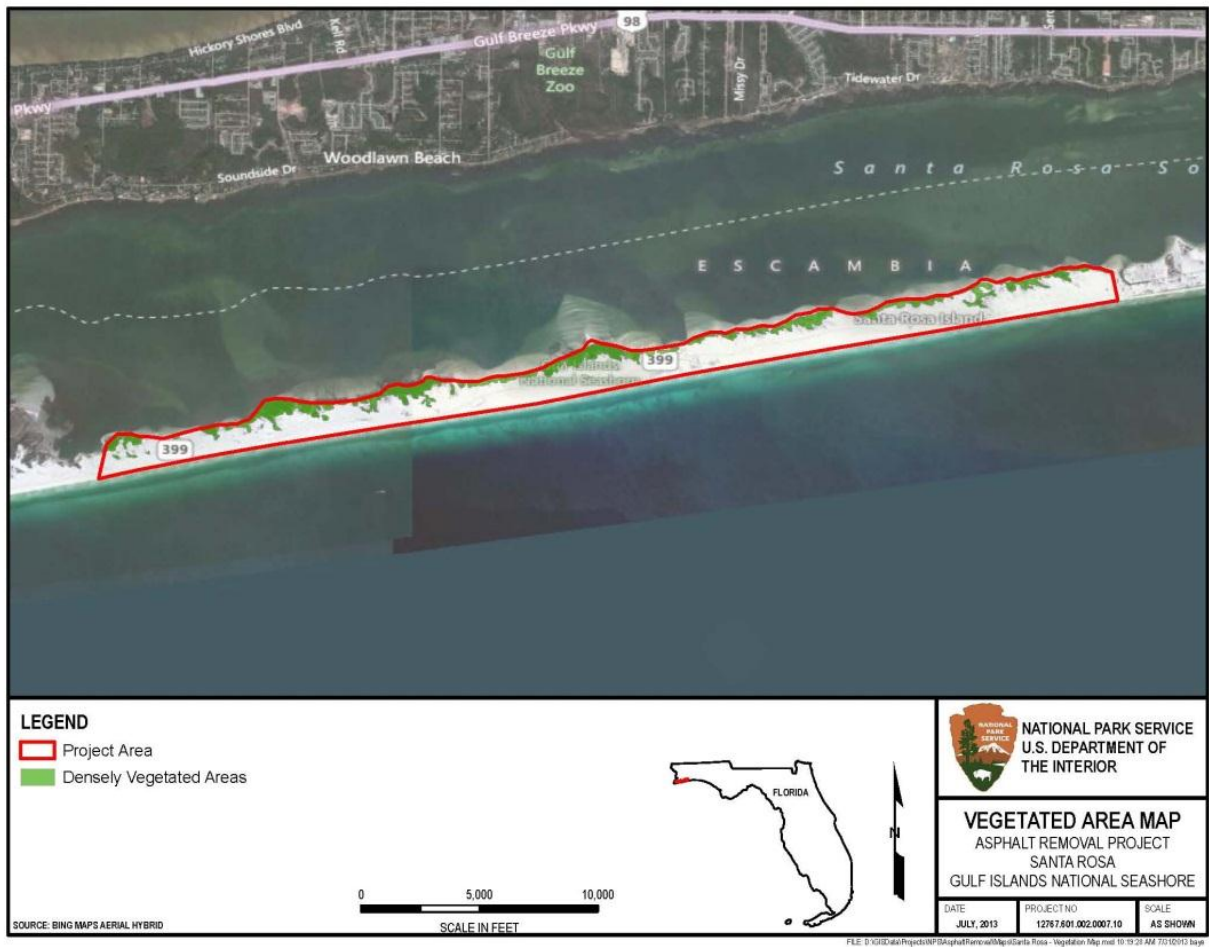


Figure 12-9. Santa Rosa area – dense vegetation.



Figure 12-10. Perdido Key area – dense vegetation.

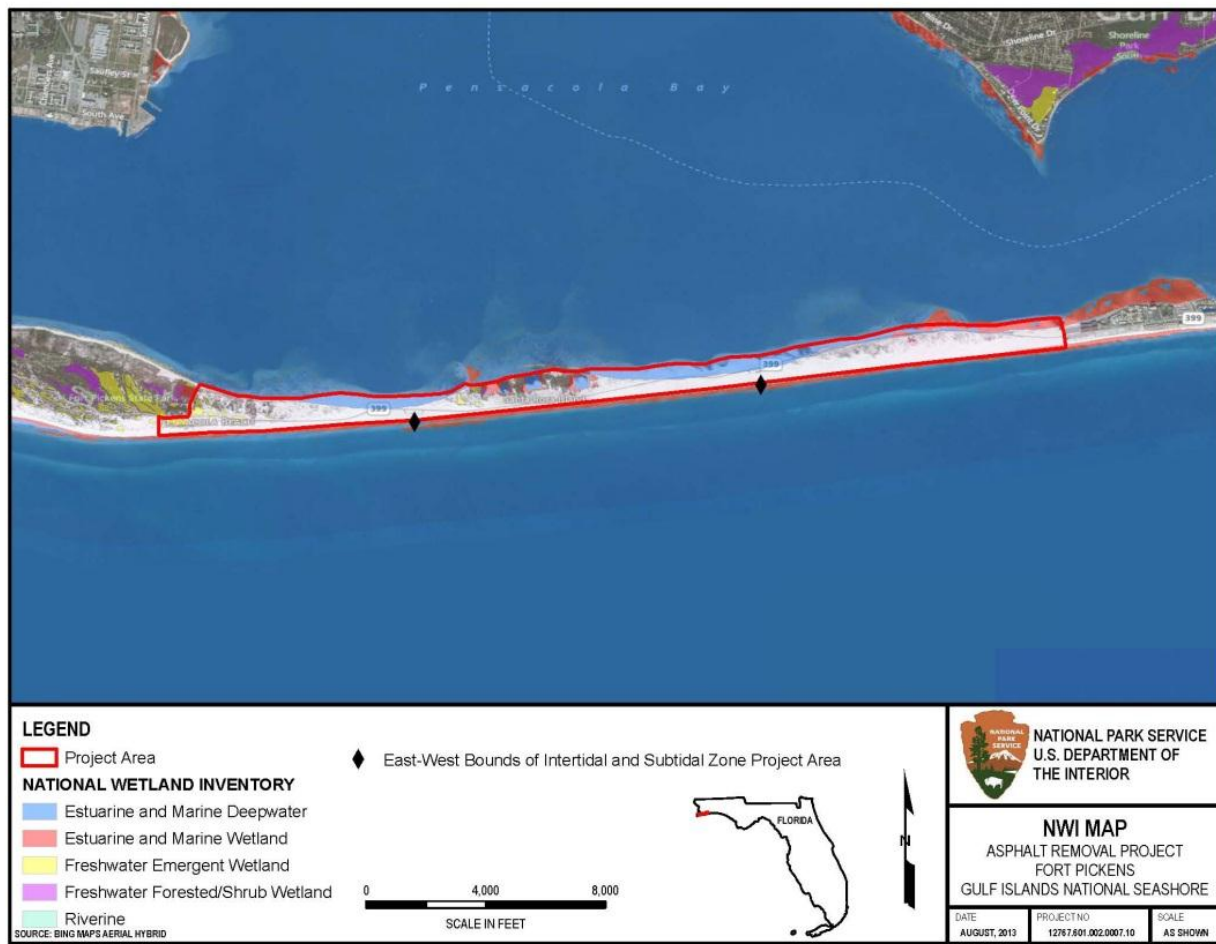


Figure 12-11. Fort Pickens wetlands located in the project area.

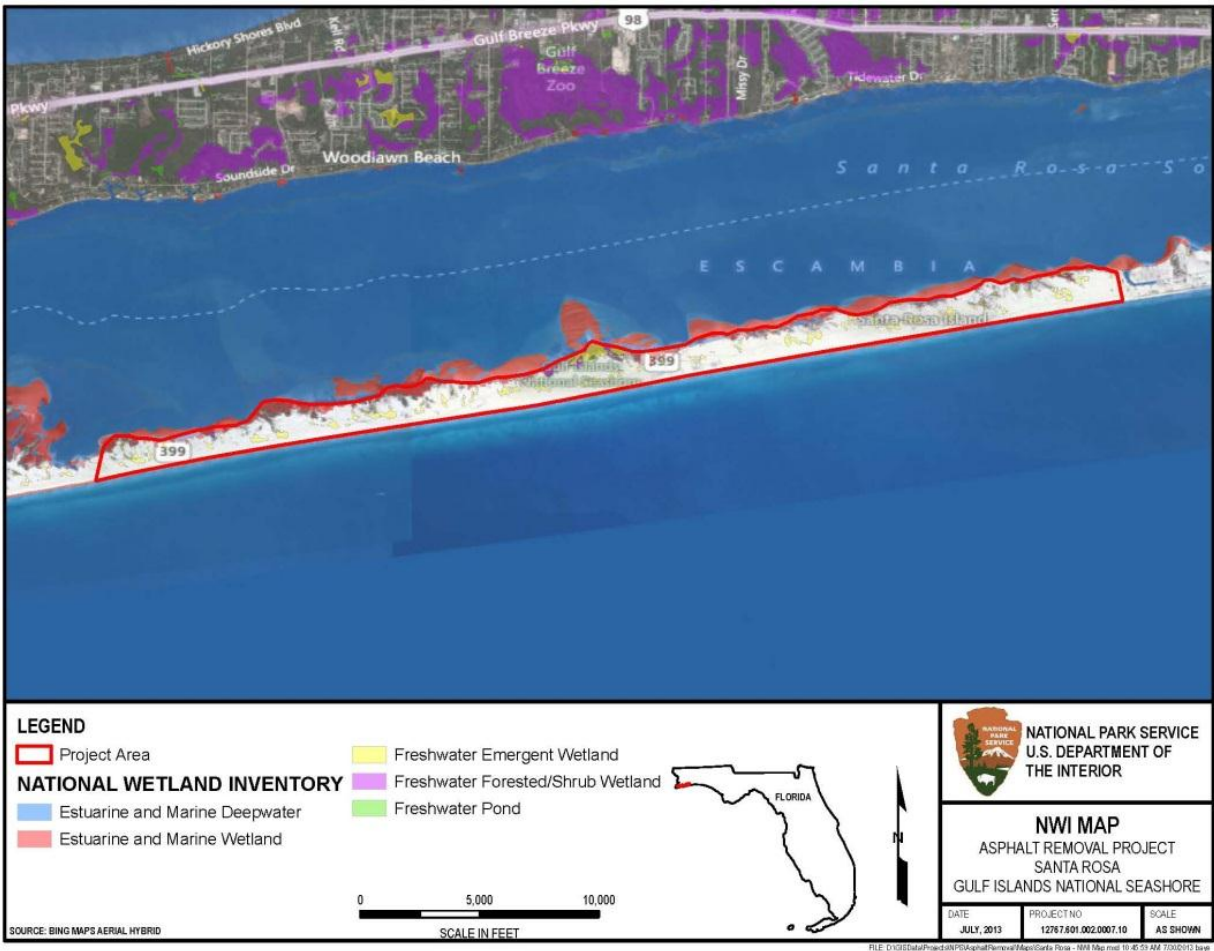


Figure 12-12. Santa Rosa wetlands located in the project area.

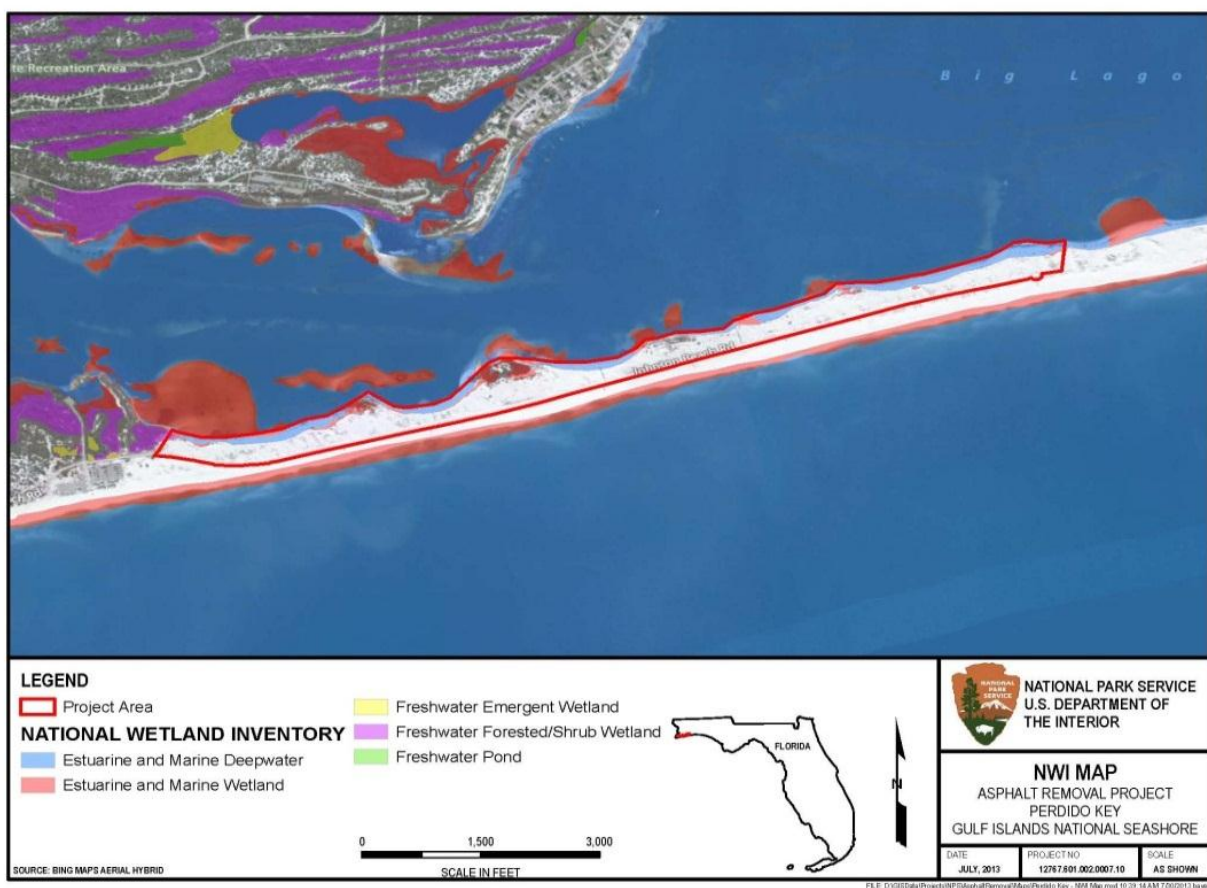


Figure 12-13. Perdido Key wetlands located in the project area.

Environmental Consequences

None of the areas associated with debris removal contain submerged aquatic vegetation such as seagrass or federally protected plant species. Therefore, the project would have no impact on these categories of plants. Impacts are likely to occur to terrestrial vegetation from removal and associated activities. As stated earlier, where vegetation in the project area is sparse, mechanized equipment would move through that area since stopping to preserve and work around every single plant is impractical. As such, sparsely spaced vegetation would be destroyed. It is assumed that all of the areas to be cleaned mechanically are sparsely vegetated, i.e., that they have 10% the plants of an area that is to be densely revegetated. Therefore, impacts to vegetation could be substantial and could involve the loss of hundreds of thousands of plants resulting in short-term moderate adverse impacts. These impacts would be mitigated within 12 months, wherein all destroyed vegetation would be replaced. This would be done either by removing all sparse vegetation before asphalt removal activities begin and replanting it afterwards, or by harvesting plant material (e.g., seeds, cuttings), cultivating it, and replanting the cleaned area with it. As such, impacts to vegetation would become short-term and minor. Long-term beneficial impacts to terrestrial vegetation would result from removing the asphalt and road base materials which act as physical impediments to naturally occurring plant establishment and growth.

According to NPS Procedural Manual #77-1: Wetland Protection, a proposed NPS action that would have adverse impacts on wetlands would require preparation of a "Wetland Statement of Findings" as part of the NEPA process. However, certain actions may be excepted from this requirement, including: *"actions designed to restore degraded (or completely lost) wetland, stream, riparian, or other aquatic habitats or ecological processes"* (Section 4.2.1.h of PM #77-1). For this exception, *"restoration" refers to reestablishing environments in which natural ecological processes can, to the extent practicable, function as they did prior to disturbance.*

- Short-term wetland disturbances that are directly associated with and necessary for implementing the restoration may be allowed under this exception.
- Conditions 1 and 2 in Appendix 2 of PM #77-1 may be waived for this excepted action if adverse impacts on hydrology and fauna exceed "minor" but are necessary to achieve restoration objectives. Justification for this waiver must be included in the NEPA document.
- Actions causing a cumulative total of up to 0.25 acres of new, long-term adverse impacts on natural wetlands may be allowed under this exception if they are directly associated with and necessary for the restoration (e.g., small structures).

Appendix 2 of PM #77-1 presents a set of conditions that must be satisfied and best management practices (BMPs) that must be implemented for a proposed action to qualify as excepted. If one or more of the conditions or BMPs cannot be met, then the action reverts to full compliance with PM #77-1 and a Wetland Statement of Findings is required. Additional BMPs or conditions may be appropriate depending on local conditions or special circumstances. The conditions/BMPs are as follows:

1. **Effects on hydrology and fluvial processes:** Action must have only negligible to minor, new adverse effects on site hydrology and fluvial processes, including flow, circulation, velocities,

hydroperiods, water level fluctuations, sediment transport, channel morphology, and so on. Care must be taken to avoid any rutting caused by vehicles or equipment.

2. **Effects on fauna:** Action must have only negligible to minor, new adverse effects on normal movement, migration, reproduction, or health of aquatic or terrestrial fauna, including at low flow conditions.
3. **Water quality protection and certification:** Action is conducted so as to avoid degrading water quality to the maximum extent practicable. Measures must be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering the waterway or wetland. Action is consistent with state water quality standards and Clean Water Act Section 401 certification requirements (check with appropriate state agency).
4. **Erosion and siltation controls:** Appropriate erosion and siltation controls must be maintained during construction, and all exposed soil or fill material must be permanently stabilized at the earliest practicable date.
5. **Proper maintenance:** Structure or fill must be properly maintained so as to avoid adverse impacts on aquatic environments or public safety.
6. **Heavy equipment use:** Heavy equipment use in wetlands must be avoided if at all possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.
7. **Stockpiling material:** Whenever possible, excavated material must be placed on an upland site. However, when this is not feasible, temporary stockpiling of excavated material in wetlands must be placed on filter cloth, mats, or some other semipermeable surface, or comparable measures must be taken to ensure that underlying wetland habitat is protected. The material must be stabilized with straw bales, filter cloth, or other appropriate means to prevent reentry into the waterway or wetland.
8. **Removal of stockpiles and other temporary disturbances during construction:** Temporary stockpiles in wetlands must be removed in their entirety as soon as practicable. Wetland areas temporarily disturbed by stockpiling or other activities during construction must be returned to their pre-existing elevations, and soil, hydrology, and native vegetation communities must be restored as soon as practicable.
9. **Topsoil storage and reuse:** Revegetation of disturbed soil areas should be facilitated by salvaging and storing existing topsoil and reusing it in restoration efforts in accordance with NPS policies and guidance. Topsoil storage must be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community.
10. **Native plants:** Where plantings or seeding are required, native plant material must be obtained and used in accordance with NPS policies and guidance. Management techniques must be implemented to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species.
11. **Boardwalk elevations:** Minimizing shade impacts, to the extent practicable, should be a consideration in designing boardwalks and similar structures. (Placing a boardwalk at an elevation above the vegetation surface at least equal to the width of the boardwalk is one way to minimize shading.)

12. **Wild and Scenic Rivers:** If the action qualifies as a water resources project pursuant to Section 7(a) of the Wild and Scenic Rivers Act, then appropriate project review and documentation requirements under Section 7(a) are required.
13. **Coastal zone management:** Action must be consistent, to the maximum extent practicable, with state coastal zone management programs.
14. **Endangered species:** Action must not jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, including degradation of critical habitat (see NPS Management Policies 2006 and guidance on threatened and endangered species).
15. **Historic properties:** Action must not have adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places.

An exception to the requirement to prepare a Wetland Statement of Findings is warranted for this project since:

- It would be improving wetland functions by removing the foreign materials from around them and, to the extent possible, from within them;
- No mechanized asphalt removal equipment would operate in supratidal wetlands or within 10 feet of them;
- Any cleanup of material from supratidal wetlands would only be done by crews using hand tools;
- Any disturbances of wetlands by crews would be short-term (during project implementation only);
- Prior to bringing equipment into a supratidal area, the area would be scouted for wetlands and clearly marked for avoidance;
- All 15 conditions and BMPs listed above would be adhered to.

Terrestrial Wildlife Species

Affected Resources

A number of wildlife species occur in and around the project areas. Although on the barrier islands upland animal species are somewhat limited in number due to the lack of diversity in vegetation and difficulty of access from mainland areas, there are a variety of invertebrates, reptiles, birds and small mammals that could be present in the project area. (NPS 2006).

The Santa Rosa beach mouse (*Peromyscus polionotus leucocephalus*) is one of eight subspecies of the oldfield mouse (*Peromyscus polionotus*) that occur, or occurred, on barrier islands and other coastal areas of Florida and Alabama. This mouse occurs only on Santa Rosa Island, including: areas near East Pass, Fort Walton Beach, Navarre Beach, Fort Pickens, Eglin Air Force Base, and east of Pensacola Beach. Currently, this species is not afforded protection under the ESA, like other beach mice subspecies, because of landowner implementation of voluntary conservation measures and protected areas of habitat. Santa Rosa beach mouse habitat is restricted to the primary dunes, interdunal areas, and secondary and scrub dunes along the Gulf coast of Santa Rosa Island. They eat fruits and seeds of dune plants, primarily sea oats (*Panicum repens*) and beach grass (*Panicum amarum*), and occasionally eat invertebrates. They breed year-round (NPS 2011b).

Environmental Consequences

Santa Rosa Beach Mice inhabit the sand dunes on Santa Rosa Island. During project work, construction crews would be operating mechanized equipment on the beach and small crews may be walking along the beach removing fragments of material by hand. Machinery would not be used within dune habitats used by the mice; however crews could use hand tools. The noise produced by the machinery and movement of the machinery and people along the beaches may disturb Santa Rosa Beach Mice, vibrate the dunes, collapse burrows, or cause adults to temporarily abandon burrows leaving juveniles in the nest. However, conservation measures would be put in place to ensure operation of machinery is conducted in a manner such that these effects are avoided. If equipment and machinery could be left in place overnight, mice could shelter under or around it. Therefore, measures have been designed to avoid these impacts as well. Based on the incorporation of avoidance measures (see Table 12-7) in to the project, the Trustees expect any impacts to only be short-term and minor.

Regarding terrestrial wildlife in general, removal activities might impact them. The project activities could result in the temporary displacement, injury, or death of “non-protected” (i.e., non-T&E) wildlife like invertebrates in the sand. Overall, removal activities would be expected to have short-term, minor impacts on wildlife. There would be small, long-term beneficial effects, however, to terrestrial wildlife as a result of this project due to the improvement of habitat.

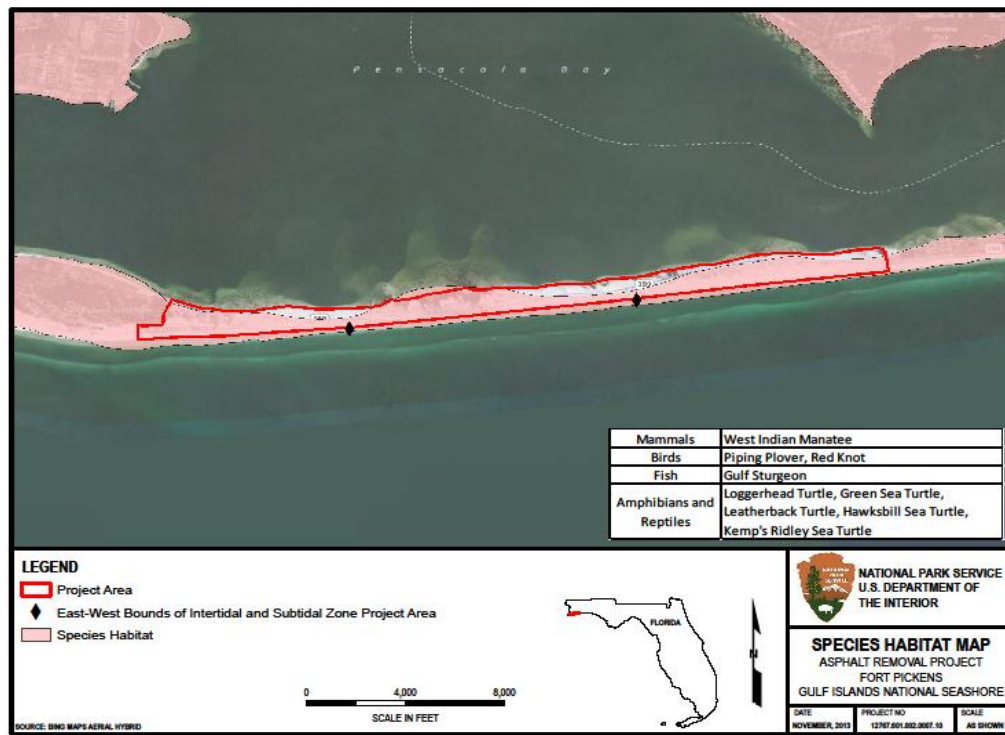


Figure 12-14. Fort Pickens project area species habitat. (NOTE: Polygon boundaries do not line up well because they were based on different aerial images. Tide levels at the time aerial images were taken could also have factored into this.)

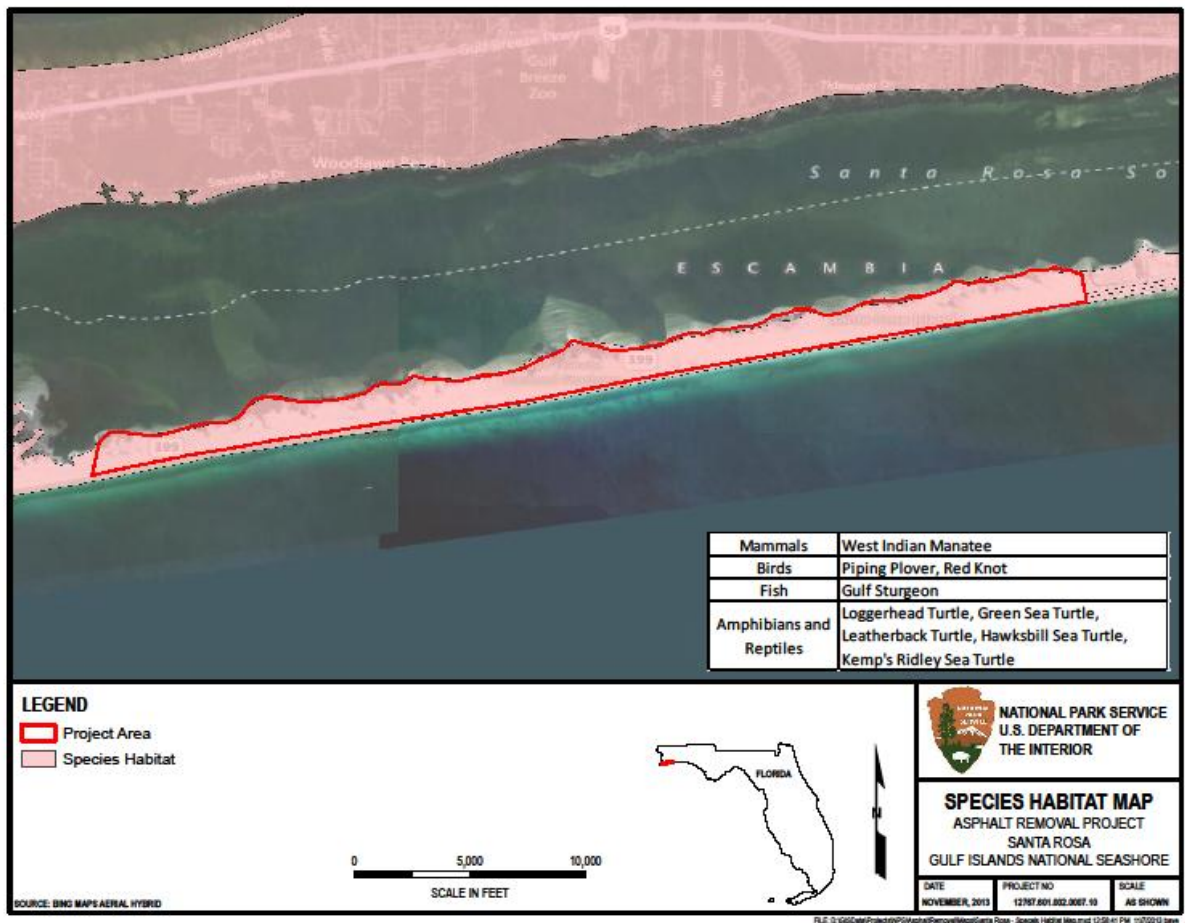


Figure 12-15. Santa Rosa project area species habitat.

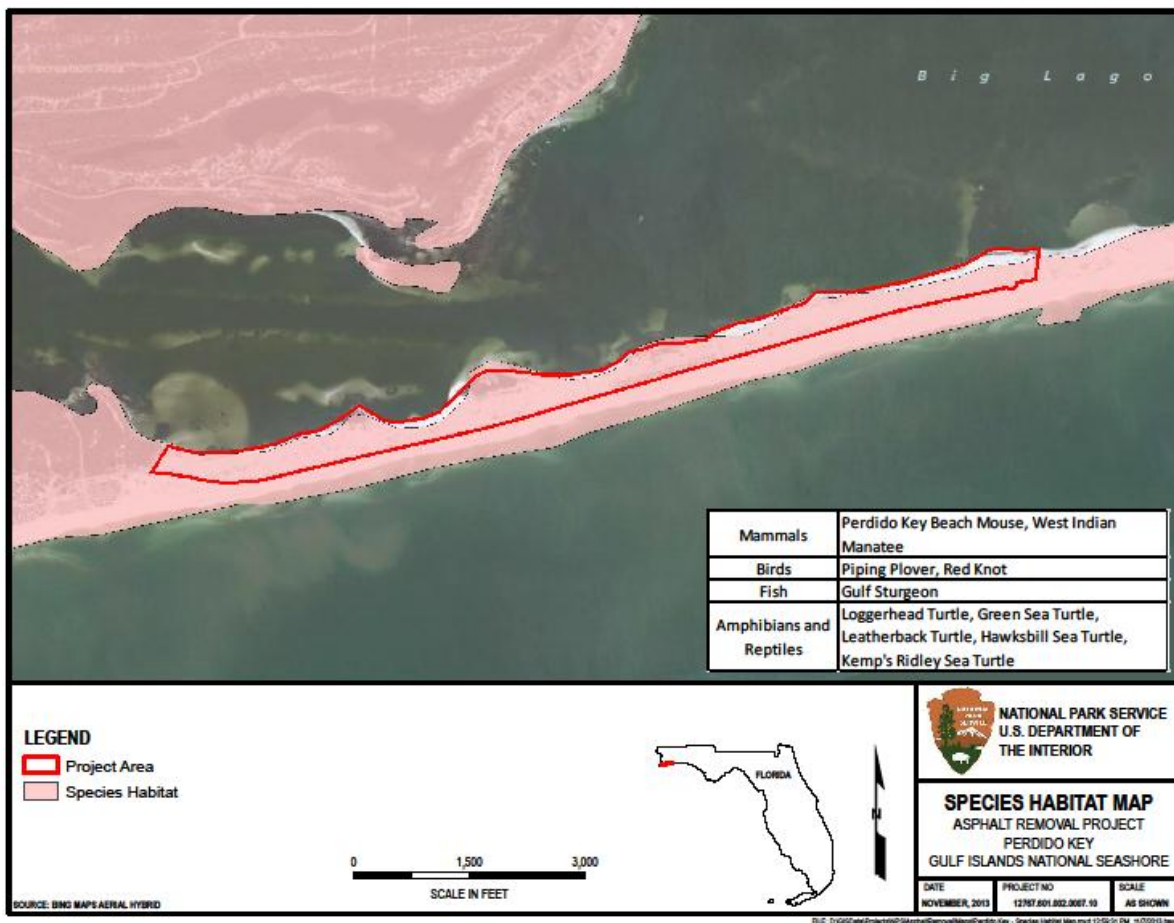


Figure 12-16. Perdido Key project area species habitat. (NOTE: Polygon boundaries do not line up well on the north shoreline because they were based on different aerial images. Tide levels at the time aerial images were taken could also have factored into this. The south border of the project area – roughly in the center of the Key – is correct as shown.)

Marine and Estuarine Fauna (fish, shell beds, benthic organisms)

Affected Resources

More than 200 species of fish have been observed in waters surrounding the Seashore. The most abundant fish species are the anchovy (*Anchoa* sp.) and the silverside (*Menidia* sp.); both species are also abundant in the shallow nearshore waters. Myriad larval and young fish occupy the shallow waters around the islands and find food and protection in the seagrass beds (NPS 2011a).

Gulf Sturgeon Critical Habitat

See Protected Species section below.

Shellfish

Several species of shellfish that are commercially, recreationally, and ecologically important occur in Seashore waters, including blue crabs (*Callinectes sapidus*), stone crabs (*Menippe mercenaria*), and many species of shrimp (NPS 2006).

Marine Mammals

Affected Environment

It is unlikely but possible that marine mammals such as dolphins and manatees would be found in the intertidal and subtidal marine waters of the Gulf where the in-water portion of this project could occur.

Environmental Consequences

In-water components of the project would result in short-term, minor impacts to the marine fauna described above during removal activities. However, disturbed individuals would likely return to the area after activities cease and the removal of asphalt and other road-base material would provide overall long-term benefits to marine species. Where asphalt and concrete are removed from the intertidal zone, habitat for species should slightly benefit as a result of the removal of these unnatural materials from the sandy surface. As mentioned above, alteration would primarily involve some temporary increases to turbidity and changes to the topography. However, these changes should not affect marine fauna because impacts would be highly localized and short-term (minutes to hours) and would occur in an area that is already very turbid due to wave action. Similarly, alterations to topography would be short-term (hours to days) and are not likely to impact fauna due to the small project footprint and the ability of these species to avoid disturbed areas. After asphalt or concrete materials are removed from the intertidal and subtidal zones, the sand that was removed with the asphalt and concrete materials and deposited on the beach above the surf line would be returned to its original location to the best extent possible and all ruts and mounds would be filled and smoothed out, thus minimizing the topographical alterations.

Typically most marine mammal species in the Gulf are found in deeper waters on the outer continental shelf or along the shelf break; therefore, they are not likely to be impacted during the restoration activities.

However, if they were in the area of work, noise and other activity associated with the proposed in-water work for this project may temporarily disturb manatees and dolphin species through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. Consultation was initiated with USFWS for this project, and on November 1, 2013, USFWS concurred that the project is not likely to adversely affect manatees as long as standard conditions are adhered to (Imm 2013). Standard Manatee Conditions for In-Water Work (USFWS 2011) would be implemented and adhered to during project implementation (see Table 12-7 and Chapter 6 for specific conditions). These conditions will be complied with, and it is anticipated that with these conservation measures in place, the proposed work would result only in short-term minor impacts to manatees as defined in Chapter 6 of this document. Dolphins are a highly mobile species and would be expected to move away from the construction area during in-water activities. The Beach Enhancement project would adhere to all applicable federal, state, and local permit conditions for the protection of marine mammals. No take of marine mammals under the MMPA is anticipated.

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act and bald eagles protected under the Bald and Golden Eagle Protection Act.

DOI consulted with the USFWS for threatened and endangered terrestrial, riverine, and estuarine species and their critical habitats, and on November 1, 2013, received concurrence with its determination that the project is not likely to adversely affect the following species: green sea turtle, hawksbill turtle, Kemp's ridley sea turtle, leatherback sea turtle, Northwest Atlantic DPS loggerhead sea turtle, piping plover, red knot, West Indian manatee, and Perdido Key beach mouse, or the designated critical habitat for the Northwest Atlantic DPS loggerhead sea turtle, piping plover, or Perdido Key beach mouse (Imm 2013). No effects would occur to all other species considered within the consultation. Within that consultation, DOI also coordinated with USFWS regarding the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Table 12-9 discusses the agreed upon conservation measures for migratory birds resulting from that coordination.

DOI also consulted with NMFS regarding marine threatened and endangered species, critical habitats, and EFH. On March 12, 2014, NMFS concurred that the project was not likely to adversely affect Gulf sturgeon, loggerhead, Kemp's ridley, green, leatherback or hawksbill sea turtles, or designated or proposed critical habitat for any of those species (Crabtree, 2014). On April 4, 2014, NMFS concurred that any adverse impacts to EFH from the project would be short-term and minor. NMFS offered no conservation recommendations for mitigation of those potential impacts pursuant to Section 305(b)(2) of the Magnuson-Stevens Fisheries Conservation and Management Act.

Affected Resources

Special Status Species

USFWS and NMFS list species as threatened or endangered when they meet criteria detailed under the ESA of 1973. In, or in the vicinity of the Seashore, several terrestrial and marine species are listed as protected by USFWS. Based on existing literature and completed consultations with the USFWS and NMFS, Table 12-6 identifies the species that are likely to occur in the Florida Panhandle and whose habitat type is present in the project area.

Table 12-6. List of Federal threatened, endangered, and other species of concern likely to occur in the Florida Panhandle.

SPECIES/CRITICAL HABITAT	STATUS	HABITAT DESCRIPTION
Fish		
<i>Acipenser oxyrinchus desotoi</i> (Gulf sturgeon)	T, CH	RIVERINE: spawning over bedrock, cobble, clean gravel, marl, soapstone, or hard clay substrates ESTUARINE/MARINE: unvegetated sandy shorelines, shallow shoals, and other areas containing mostly sand; Critical Habitat present in project area around Perdido Key, Ft. Pickens and Santa Rosa
Reptiles		
<i>Caretta caretta</i> (loggerhead turtle) Northwest Atlantic Distinct Population Segment	T, PCH	TERRESTRIAL: sandy beaches; Nesting; Proposed Critical Habitat present in project area at Perdido Key ESTUARINE/MARINE: unvegetated sandy shorelines, shallow shoals, and other areas containing mostly sand
<i>Chelonia mydas</i> (green sea turtle)	E	TERRESTRIAL: sandy beaches; Nesting ESTUARINE/MARINE: un vegetated sandy shorelines, shallow shoals, and other areas containing mostly sand
<i>Dermochelys coriacea</i> (leatherback turtle)	E	TERRESTRIAL: sandy beaches; Nesting ESTUARINE/MARINE: unvegetated sandy shorelines, shallow shoals, and other areas containing mostly sand
<i>Eretmochelys imbricata</i> (hawksbill sea turtle)	E	TERRESTRIAL: sandy beaches; Nesting ESTUARINE/MARINE: unvegetated sandy shorelines, shallow shoals, and other areas containing mostly sand
<i>Lepidochelys kempii</i> (Kemp's Ridley Sea Turtle)	E	TERRESTRIAL: sandy beaches; Nesting ESTUARINE/MARINE: unvegetated sandy shorelines, shallow shoals, and other areas containing mostly sand
Birds		
<i>Charadrius melodus</i> (piping plover)	T, CH	ESTUARINE: exposed unconsolidated substrate MARINE: exposed unconsolidated substrate TERRESTRIAL: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants. Critical Habitat present in project area at Santa Rosa
<i>Calidris canutus rufa</i> (red knot)	P	ESTUARINE: exposed unconsolidated substrate MARINE: exposed unconsolidated substrate TERRESTRIAL: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants
Mammals		
<i>Peromyscus polionotus trissyllepsis</i> (Perdido Key beach mouse)	E, CH	TERRESTRIAL: beach dune, coastal scrub. - Critical Habitat present in project area at Perdido Key
<i>Trichechus manatus</i> (West Indian manatee)	E	ESTUARINE: submerged vegetation, open water MARINE: open water, submerged vegetation RIVERINE: alluvial stream, blackwater stream, spring-run stream
Status: E=endangered, T=threatened, P=proposed, CH=critical habitat, PCH=proposed critical habitat Source: This table reflects the information provided by the USFWS Biological Evaluation Form, September 27, 2013.		

Gulf Sturgeon (*Acipenser oxyrinchus desotoi*):

The Gulf sturgeon is an anadromous species which migrates from coastal bays and estuaries to large coastal rivers in the spring for spawning and then returns to brackish and marine environments from October through March for foraging. It is likely to be using estuarine and marine habitats surrounding the project area from mid- to late fall through early spring for foraging.

Gulf Sturgeon Critical Habitat

The proposed project area is located in critical habitat for Gulf sturgeon (See

Figure 12-17, Figure 12-18, and Figure 12-19). Near shore waters within one nautical mile of the mainland from Pensacola Pass to Apalachicola Bay and the Perdido Key area and the area north of Santa Rosa Island were designated as critical habitat, as they are believed to be important migratory pathways between Pensacola Bay and the Gulf of Mexico for feeding and genetic exchange (NPS 2011a). The Primary Constituent Elements for Gulf sturgeon critical habitat that are *present within or adjacent to* the project area are: 1) Abundant food items, such as detritus, aquatic insects, worms, and/or mollusks, within riverine habitats for larval and juvenile life stages; and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks and/or crustaceans, within estuarine and marine habitats and substrates for subadult and adult life stages; 2) Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; 3) Sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and 4) Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (*e.g.*, an unobstructed river or a dammed river that still allows for passage).

Essential Fish Habitat

The 1996 Magnuson-Stevens Fishery Conservation and Management Act (MFCMA) requires cooperation among NMFS, anglers, and federal and state agencies to protect, conserve, and enhance Essential Fish Habitat (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The designation and conservation of EFH seek to minimize adverse effects on habitat caused by fishing and non-fishing activities. NOAA's Estuarine Living Marine Resources (ELMR) Program developed a database on the distribution, relative abundance, and life history characteristics of ecologically and economically important fishes and invertebrates in the nation's estuaries. NOAA designated EFH for more than 30 estuaries in the northern Gulf of Mexico for a number of species of finfish and shellfish. All of Pensacola Bay and waters surrounding the Seashore are designated as EFH. Therefore, EFH is present in the proposed beach enhancement project area for the following species:

- Sandbar Shark (*Carcharhinus plumbeus*)
- Scalloped Hammerhead Shark (*Sphyma lewini*)
- Bonnethead Shark (*Sphyma tiburo*)
- Finetooth Shark (*Carcharhinus isodon*)
- Tiger Shark (*Galeocerdo cuvier*)
- Blacktip Shark (*Carcharhinus limbatus*)
- Spinner Shark (*Carcharhinus brevipinna*)
- Atlantic Sharpnose Shark (*Rhizoprionodon terraenovae*)
- Bull Shark (*Carcharhinus leucas*)
- Blacknose Shark (*Carcharhinus acronotus*)
- Brown Shrimp (*Penaeus aztecus*)
- White Shrimp (*Penaeus setiferus*)
- Pink Shrimp (*Penaeus duorarum*)
- Red drum (*Sciaenops ocellatus*)
- Reef Fish (43 Species)

Loggerhead Sea Turtle (*Caretta caretta*):

The Northwest Atlantic Distinct Population Segment (DPS) of the loggerhead sea turtle (loggerhead) is regularly observed using the Seashore for nesting and the surrounding waters for swimming, migrations, and foraging. Preferences for nesting beaches include high energy coarse-grained beaches adjacent to the ocean that are narrow and steeply sloped (NOAA Fisheries 2013c). Habitat for foraging and migration includes open ocean, inshore areas, bays, salt marshes, ship channels, and mouths of large rivers. This sea turtle feeds on mollusks, fish, crustaceans, and other marine organisms. Turtle nesting typically occurs on sandy beaches during the months of May through August, with hatching occurring from late July through October (NPS 2011a).

Loggerhead Sea Turtle Critical Habitat

Critical habitat for the loggerhead sea turtle has been proposed within the project area at Perdido Key (see Figure 12-19). Proposed critical habitat includes the extra-tidal or dry, sandy beaches from the mean high-water line to the toe of the secondary dune, which are capable of supporting a high density of nests or serving as an expansion area for beaches with a high density of nests and that are well

distributed within each State, or region within a State, and representative of total nesting (USFWS 2013b). Proposed primary constituent elements (PCEs) for loggerheads includes: 1) Suitable nesting beach habitat that: (a) has relatively unimpeded nearshore access from the ocean to the beach for nesting females and from the beach to the ocean for both post-nesting females and hatchlings and (b) is located above mean high water to avoid being inundated frequently by high tides. 2) Sand that: (a) allows for suitable nest construction, (b) is suitable for facilitating gas diffusion conducive to embryo development, and (c) is able to develop and maintain temperatures and moisture content conducive to embryo development. 3) Suitable nesting beach habitat with sufficient darkness to ensure that nesting turtles are not deterred from emerging onto the beach and hatchlings and post-nesting females orient to the sea. These PCEs are present at Perdido Key.

Green Sea Turtle (*Chelonia mydas*):

The green sea turtle breeding populations in Florida and on the Pacific Coast of Mexico are federally listed as endangered. All other populations are federally listed as threatened. In the Gulf of Mexico, green sea turtles are found in offshore and near-shore waters. Green sea turtles are herbivorous, feeding mainly on seagrasses and algae. In the southeastern United States, nesting generally occurs between June and September on sandy beaches. Eggs hatch approximately two months later. Hatchlings swim to offshore areas where they live for several years. As the juveniles mature, they return to near-shore foraging grounds where they become almost exclusively herbivorous (NMFS, 2009). Green sea turtles nest within the project area.

Leatherback Sea Turtle (*Dermochelys coriacea*):

While not common, there have been sporadic observations of Leatherback Turtles in Mississippi waters (MDWFP 2001). Leatherback sea turtles are federally listed as endangered. This species mainly inhabits the offshore open ocean; however, it does use nearshore coastal waters during nesting or feeding. Their main forage item is jellyfish. This species migrates long distances from nesting to feeding areas. The leatherback turtle mates in the waters adjacent to nesting beaches and along turtle migratory corridors. Females nest on sandy, tropical beaches several times during a nesting season, which occurs from March to July, typically at 8- to 12-day intervals. After nesting, females migrate from tropical waters to more temperate waters. Leatherback turtles rarely nest in the project area; however, Seashore staff documented its first leatherback nest in 2000 (NPS, 2007).

Hawksbill Sea Turtle (*Eretmochelys imbricata*):

The Hawksbill sea turtle is federally listed as endangered. Although this species uses various habitats such as the open ocean, bays, and estuaries throughout different life stages, it is mainly associated with coral reefs. The main dietary items of this species are sponges and other invertebrates (NOAA Fisheries 2013a). The main threat to hawksbills is habitat loss of coral reef communities (NMFS, 2009). In the continental United States, nesting is generally limited to the southeast coast of Florida and the Florida Keys (NMFS, 2009). Although nesting is possible in the panhandle of Florida and Hawksbill sea turtles have been observed at the Seashore, they are very rare and nesting within the project area has never been reported or documented (Hoggard, 2009).

Kemp's Ridley Sea Turtle (*Lepidochelys kempii*):

The Kemp's Ridley sea turtle, federally listed as endangered and the most critically endangered of all five of the listed sea turtle species endemic to the area, is distributed throughout the Gulf of Mexico and U.S. Atlantic seaboard. Typical habitat for this species includes nearshore and inshore coastal waters; often salt marshes and neritic zones with muddy or sandy substrate (NOAA Fisheries 2013b). Their diet consists mainly of swimming crabs, fish, jellyfish, and mollusks. Nesting occurs from May to July, with an incubation period of 50 to 60 days. Post-hatchlings travel offshore to avoid predation in shallow waters. Once the Kemp's Ridley turtle reach a carapace length of approximately 8 inches, it returns to near-shore waters to feed and develop (NMFS, 2009). The Kemp's Ridley turtle is known to nest within the project area (Hoggard, 2009).

Piping Plover (*Charadrius melodus*):

The piping plover, federally listed as threatened, uses shorelines and sparsely vegetated sand beaches, mudflats, and salt marshes for feeding and resting during migration and winter months. Breeding and nesting do not occur along the Gulf coast. Piping plovers begin arriving to the Seashore in July and remain into the following May; wintering habitat is concentrated in open beaches and tidal flats. Full surveys have not been conducted, but within the Florida District of the Seashore, piping plovers are known to winter in tidal flat areas on Perdido Key and on the north side of Santa Rosa Island (NPS 2011b).

Piping Plover Critical Habitat

Parts of the Seashore have been designated as critical habitat for wintering piping plover (see Figure 12-18 and Figure 12-19). The PCEs for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the

natural processes that support these habitat components. PCEs are as follows: 1) Intertidal flats with sand or mud flats (or both) with no or sparse emergent vegetation, 2) Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Such sites may have debris, detritus, or microtopographic relief (less than 50 cm above substrate surface) offering refuge from high winds and cold weather, and 3) Important components of the beach/dune ecosystem include surf-cast algae, sparsely vegetated back beach and salterns, spits, and washover areas. Washover areas are broad, unvegetated zones with little or no topographic relief, that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action. The PCEs are found in geologically dynamic coastal areas that support intertidal beaches and flats (between annual low tide and annual high tide) and associated dune systems and flats above annual high tide. These PCEs are present in the project area. Activities that affect PCEs include those that directly or indirectly alter, modify, or destroy the processes that are associated with the formation and movement of barrier islands, inlets, and other coastal landforms. Those processes include erosion, accretion, succession, and sea-level change. The integrity of the habitat components also depends upon daily tidal events and regular sediment transport processes, as well as episodic, high-magnitude storm events (Service 2001).

Red Knot (*Calidris canutus rufa*):

The red knot, federally listed as a candidate species, is a long-distance migrant which migrates as part of a large flock. The southeastern United States is mostly used as wintering habitat or as a migrating stopover for red knots; small populations overwinter in Florida although most migrate to South America. Wintering/migrating habitat consists of marine and estuarine habitats, with exposed unconsolidated substrate, dunes, and sandy beaches. In Florida, foraging occurs along sandy beaches, tidal mudflats, salt marshes, peat banks, and mangrove and brackish lagoons. Data on the distribution of red knot within the Seashore is not available, although they have been spotted in the project area (map provided by eBird (www.ebird.org) and created November 19, 2013).

Perdido Key Beach Mouse (*Peromyscus polionotus trissyllepsis*):

The Perdido Key beach mouse, federally listed as endangered, is one of eight subspecies of the oldfield mouse (*Peromyscus polionotus*) that occur, or occurred, on barrier islands and other coastal areas of Florida and Alabama. The Perdido Key beach mouse occurs in the wild only on Perdido Key. Perdido Key beach mouse habitat is restricted to the primary dunes, interdunal areas, and secondary and scrub dunes along the Gulf coast of Perdido Key. They eat fruits and seeds of dune plants, primarily sea oats (*Panicum repens*) and beach grass (*Panicum amarum*), and occasionally eat invertebrates. They breed year-round (NPS 2011b).

Perdido Key Beach Mouse Critical Habitat

Perdido Key beach mouse critical habitat is within the project area at Perdido Key (see Figure 12-19). PCEs for Perdido Key beach mouse are: 1) A contiguous mosaic of primary, secondary scrub vegetation and dune structure, with a balanced level of competition and predation and few or no competitive or predaceous nonnative species present, that collectively provide foraging opportunities, cover, and burrow sites; 2) Primary and secondary dunes, generally dominated by sea oats that, despite occasional temporary impacts and reconfiguration from tropical storms and hurricanes, provide abundant food resources, burrow sites, and protection from predators; 3) Scrub dunes, generally dominated by scrub oaks, that provide food resources and burrow sites and provide elevated refugia during and after

intense flooding due to rainfall and/or hurricane induced storm surge; 4) Functional, unobstructed habitat connections that facilitate genetic exchange, dispersal, natural exploratory movements, and recolonization of locally extirpated areas; and 5) A natural light regime within the coastal dune ecosystem, compatible with the nocturnal activity of beach mice, necessary for normal behavior, growth and viability of all life stages. Beach mouse habitat at Perdido Key consists mainly of primary and secondary dune habitat, but provides the longest contiguous expanse of frontal dune habitat within the historic range of the PKBM, and possesses all five PCEs essential to conservation of the species. The area was included in the initial critical habitat designation (50 FR 23872) as well as the 2006 revision (71 FR 60238).

West Indian Manatee (*Trichechus manatus*):

The West Indian manatee is federally listed as endangered. The Florida manatee (*Trichechus manatus latirostris*), a subspecies of the West Indian manatee, is found in the Florida District of the Seashore. The manatee is a large gray or brown aquatic mammal native to the United States in Florida, Georgia, and Puerto Rico. Manatees may be found in coastal or estuarine waters in Florida, but are most common in peninsular Florida. Manatees are found in shallow rivers, estuaries, and inshore coastal areas where they feed on seagrasses and other aquatic vegetation. During the winter months, manatees migrate to the warmer waters of south Florida or form large aggregations in natural springs and industrial outfalls where water temperatures are elevated. At the Seashore, manatee sightings are rare but have been documented in the Gulf of Mexico and Pensacola Bay (NPS, 2011b).

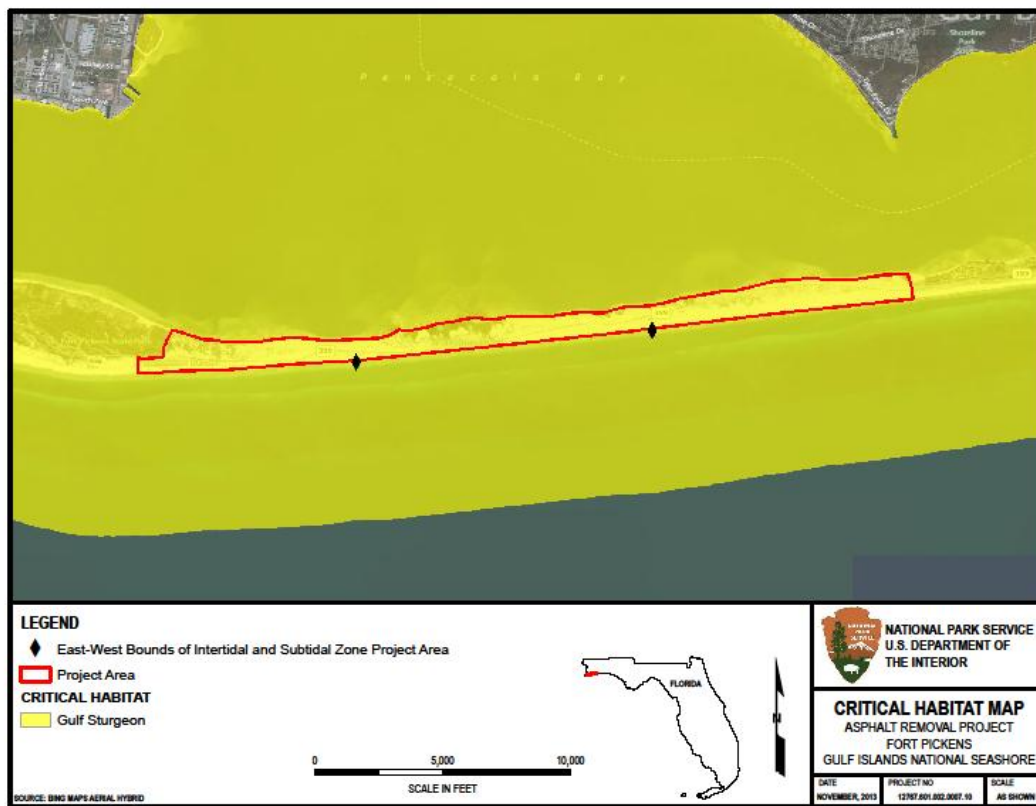


Figure 12-17. Fort Pickens project area special status species' critical habitat.

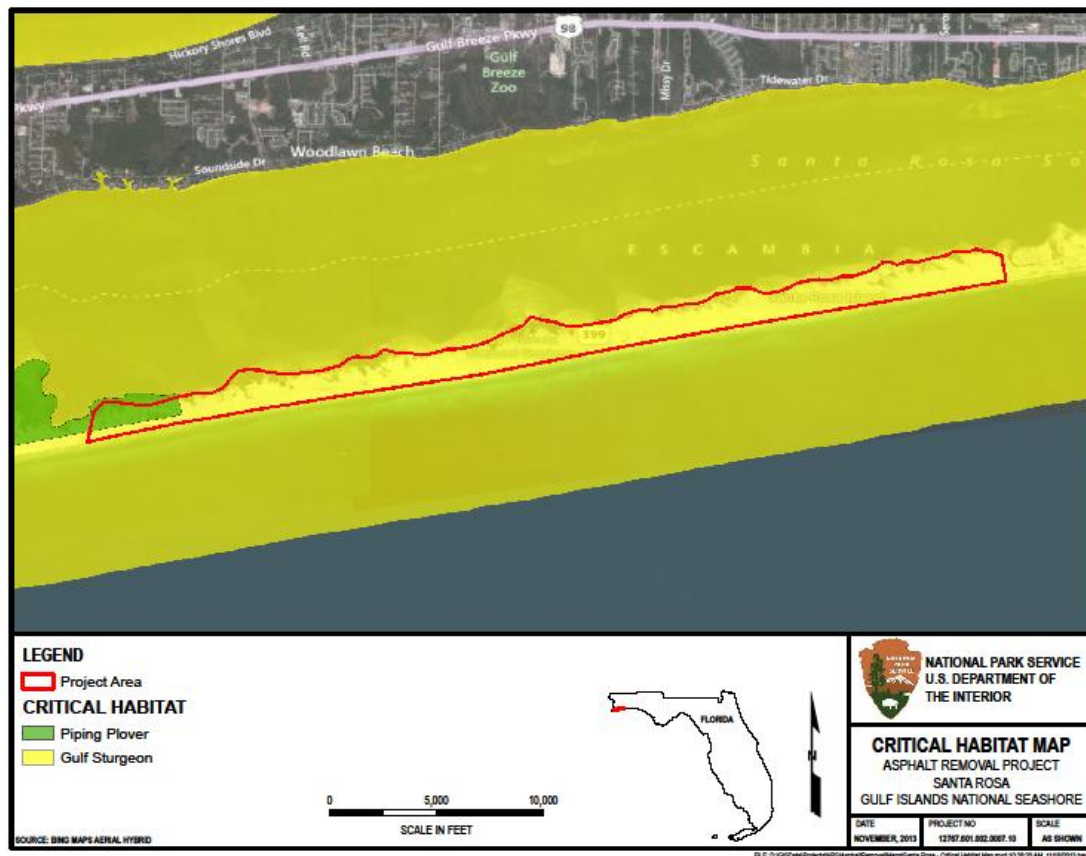


Figure 12-18. Santa Rosa project area special status species' critical habitat.

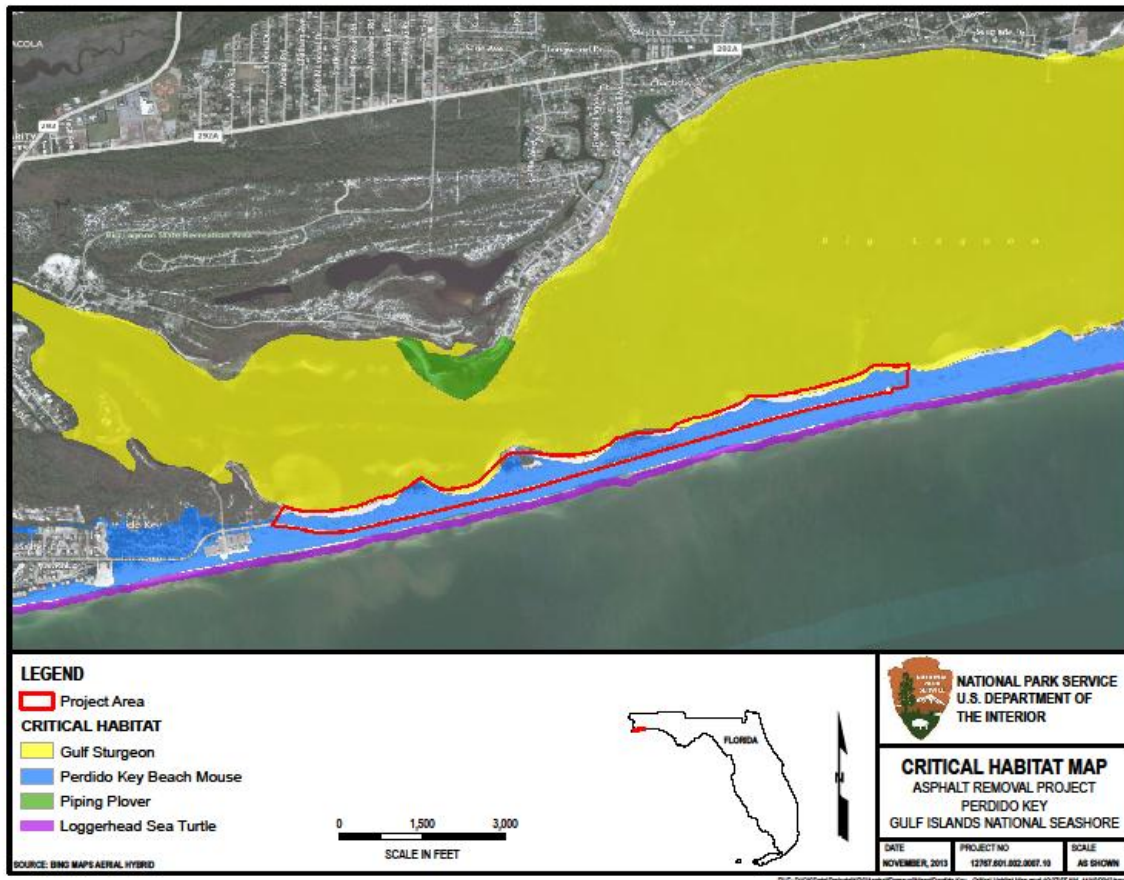


Figure 12-19. Perdido Key project area special status species' critical habitat.

Environmental Consequences

The proposed project could impact the protected species described above. DOI initiated informal consultation with the USFWS, and on November 1, 2013 the USFWS concurred with the DOI determination that the project is “Not Likely to Adversely Affect” the following species within their jurisdiction: green sea turtle, hawksbill turtle, Kemp’s ridley sea turtle, leatherback sea turtle, Northwest Atlantic DPS loggerhead sea turtle, piping plover, red knot, West Indian manatee, and Perdido Key beach mouse (Imm, 2014). USFWS also concurred that the project is not likely to adversely affect the designated terrestrial critical habitats for Northwest Atlantic DPS loggerhead sea turtle, piping plover, and Perdido Key beach mouse.

DOI also initiated consultation with NOAA’s NMFS for the portion of this project that would take place in the intertidal zone. In a letter dated March 12, 2014, NMFS concurred that the project is not likely to adversely affect leatherback, Kemp’s ridley, hawksbill, loggerhead, or green sea turtles, or Gulf sturgeon, nor the designated or proposed critical habitats for these species occurring within NMFS’ jurisdiction (Crabtree, 2014).

The project is considered “Not Likely to Adversely Affect” Gulf sturgeon or sea turtles within either USFWS or NOAA jurisdiction. DOI also determined that two of the seven Primary Constituent Elements for Gulf sturgeon would be impacted from the project: “abundant food items” would sustain minor

impacts and “water quality” would sustain negligible impacts. NMFS concurred, stating that the impacts to the essential features of Gulf sturgeon critical habitat and proposed loggerhead critical habitat are expected to be negligible due to the small size of the project footprint, the mitigation measures in place for sea turtles, the time of year the project would be implemented, and the ability of Gulf sturgeon to avoid disturbed areas.

Most of the project work would occur during the late summer, fall and winter months when sea turtles are less likely to be present in the terrestrial environment. However, project work may coincide with sea turtle hatchling presence (i.e. Aug. 15 – Nov. 1). During this time construction crews would be operating mechanized equipment on the beach and small crews may be walking along the beach removing some fragments of material by hand. The noise produced by the machinery and movement of the machinery along the beaches may disturb any late nesting sea turtles or could crush nests. Ruts made by vehicles on shore can potentially trap sea turtles/hatchlings. Removal of large pieces of material may create holes that could potentially trap sea turtles or hatchlings, and hatchlings are vulnerable to being run over. Table 12-6 describes conservation measures to protect sea turtles during all life stages. The USFWS concurred that this project is “Not Likely to Adversely Affect” the five sea turtles on land, and NMFS concurred that it is “Not Likely to Adversely Affect” the sea turtles in marine environments. In the concurrence letter, NMFS characterized the potential effects of the project as insignificant because there is equally suitable forage and refuge habitat further along either side of the project area, construction will only occur during daylight hours in a very small portion of the overall project area at any given time, and because increases in turbidity and alterations in benthic topography will be temporary, highly localized, and short-lived in an area that is already very turbid due to wave action. The implementation of conservation measures and the short duration and highly localized nature of the project would minimize any potential impacts such that they are short-term and minor.

This project could temporarily impede nearshore access (PCE 1) and short-term, temporary driving on the beach could compact sand. Conservation measures in Table 12-7 below would be implemented to ensure PCEs will continue to support the survival and recovery of Northwest Atlantic DPS of loggerhead sea turtles; therefore any impacts to critical habitat would be short-term and minor.

This project would likely result in short-term, minor adverse impacts to EFH due to benthos disturbances and turbidity. Again, these impacts would be short-term and highly localized. Removal of asphalt and concrete from these zones would actually have a small but long-term benefit on EFH by removing impediments to the normal use of the sandy benthos in this area by EFH species. DOI consulted with NMFS regarding potential impacts to EFH from the in-water portion of this project. In a letter dated April 4, 2014, NMFS concurred that adverse impacts to EFH will be short-term and minor. Further, NMFS offered no conservation recommendations pursuant to the Magnuson-Stevens Act.

Project work would occur during the late summer, fall and winter months over a period of approximately 4 years. Piping Plovers and Red Knots do not nest in the project area, but do use it for wintering habitat. Both species could be startled by work crews, vehicles, and machinery and stop foraging or roosting. However, these birds would be expected to move away from the disturbance to other suitable habitats outside of the disturbance area. There is an abundance of suitable foraging and roosting habitat within the Seashore and within 2 miles of the action area in which plovers would be expected to move to or within (i.e., within their normal range of movements). The noise produced by

the machinery and movement of the machinery and personnel along the beaches may disturb either species present on site, but both could avoid disturbance by moving into adjacent areas of unimpacted habitat. Therefore we would not expect startling and temporary displacement to interrupt or have long-term consequences to normal behaviors. Foraging habitats are abundant within the Seashore and sand and prey items would be sieved on site and not removed from the area therefore we do not expect indirect effects to piping plover from a loss of prey base. Based upon the normal movement patterns of Piping Plover and Red Knot and the conservation measures outlined in Table 12-7 below (allowing movement of their own volition, and watching for the birds), any impacts would be short-term and minor.

Areas containing habitat components that are essential for primary biological needs of foraging, sheltering, and roosting are considered critical habitat. In the long-term, construction activity impacts should be largely beneficial to critical habitat, with cleanup improving long-term foraging, sheltering, and roosting resources. Cleanup would improve the piping plover critical habitat PCEs of sparsely vegetated intertidal flats, flats above high tide, back beach and washover areas by removing roadbed debris, thus returning the site to a more natural condition. During project work, construction crews would be operating mechanized equipment on the beach and small crews may be walking along the beach removing fragments of material by hand. Sand would be sifted in place and all sand and non-roadbed-related debris would be returned as near as possible to its original location. The vast majority of the material to be removed is expected to cause surficial disturbance only. No significant change to the structure of existing landscape features (including PCEs) is expected, and should changes occur, they would occur because of the removal of foreign materials and should not affect the way landscape features are formed and maintained in the future. Further, the project is not anticipated to alter the way any coastal processes (such as washovers and spits) occur. During project implementation machinery on the beach may compact sand and/or create divots where asphalt is removed, however this is not expected to change plant densities in any way, and where plants are removed appropriate native plants would be planted in their place. Thus no short or long-term effects to piping plover critical habitat are expected to occur.

In addition, we do not expect increased visitor use due to the project; rather we expect the project to result in an improved visitor experience. Therefore, we do not expect indirect effects from human use to increase or impact any of the protected species or critical habitats discussed above.

The majority of this project is to be accomplished on shore; however, a portion of this project would occur in the intertidal zone on the Gulf side of the Fort Pickens area. Due to the depth of water within the intertidal zone, lack of submerged aquatic vegetation, and rarity of encountering West Indian manatees at Gulf Islands National Seashore, it is unlikely that West Indian manatees would be present in the action area. In-water asphalt removal would not involve the use of boats or barges. Construction equipment such as a backhoe with a long arm and bucket, located on shore near the mean low tide line, may be used to retrieve materials. Turbidity of the water within the intertidal zone may increase during the project work within this area and the noise from the machinery may affect species within the intertidal zone and adjacent areas. If transiting the area manatees could be startled by in-water removal or have difficulty navigating due to turbidity. We expect West Indian manatees to naturally avoid any areas of increased turbidity as they are not known to use turbid habitats. We do not expect this avoidance of the project area to result in changes to normal behaviors. Also, because of the wave action

in this area, natural background levels of turbidity are already high. Conservation measures (see Table 12-7) would be implemented to prevent any direct impacts to the manatee. Therefore, any potential impacts would be short-term and minor.

Perdido Key Beach Mice inhabit the sand dunes along Perdido Key, but not other locations considered within this project. During project work, construction crews would be operating mechanized equipment on the beach and small crews may be walking along the beach removing fragments of material by hand. Machinery would not be used within dune habitats used by the mice; however crews could use hand tools in those areas. The noise produced by the machinery and movement of the machinery and people along the beaches may disturb the Perdido Key Beach Mice, vibrate the dunes, collapse burrows, or cause adults to temporarily abandon burrows leaving juveniles in the nest. However, conservation measures would be put in place to ensure operation of machinery is conducted in a manner such that these effects are avoided. If equipment and machinery were left in place overnight, mice could shelter under or around it. Therefore, measures have been designed to avoid these impacts as well. Based on the incorporation of avoidance measures to the project (see Table 12-7), we expect any impacts to be short-term and minor.

PCEs for Perdido Key beach mouse critical habitat largely refer to landscape level areas (including vegetation and dune structure and habitat connections). This project would not affect the area on a landscape level. Work would occur in small areas and move from one area to the other as asphalt and aggregate material are removed. It is unlikely that this work would alter the landscape mosaic of vegetation, dunes, and other habitat connections with which the PCEs are concerned. Where vegetation is damaged it would be replaced, though vegetation in mouse habitat is expected to be avoided. The PCE of natural light regimes would not be affected because all work would occur within daylight hours. Therefore, we expect any impacts to critical habitat to be short-term and minor.

During restoration activities, a monitor would be present that would be able to halt work if federally-listed species are located in the project area. Work would be halted until such time as the area is deemed safe to continue the operation. Additionally, NOAA-NMFS' sea turtle "construction conditions" would be followed. Overall, restoration activities would restore the site to its natural conditions, which should have a positive impact on the federally listed species who utilize the project area. No negative impacts to marine mammals or sea turtles would be anticipated as a result of the proposed project. Table 12-7 provides the conservation measures that would be implemented to reduce impacts to protected species.

Table 12-7. Explanation of actions (conservation measures) to be implemented to reduce impacts to protected species.

SPECIES/CRITICAL HABITAT	ACTIONS TO MINIMIZE IMPACTS
Gulf Sturgeon	<ul style="list-style-type: none"> • Instruct all personnel associated with the project in the potential presence of Gulf sturgeon. Furthermore, inform the project personnel of the civil and criminal penalties for harming, harassing, or killing species that are protected. • Keep noise low (in air and in water) to the greatest extent possible. • Care shall be taken in lowering equipment or material below the water surface and into the sediment. These precautions would be taken to ensure no harm occurs to any sturgeon which may have entered the project area undetected. • In the unlikely event that a protected Gulf sturgeon approaches any near-shore areas of the proposed project, work would immediately cease until the sturgeon moves away from the area on its own volition.

SPECIES/CRITICAL HABITAT	ACTIONS TO MINIMIZE IMPACTS
<p>Sea Turtles (Loggerhead Turtle, Green Sea Turtle, Leatherback Turtle, Hawksbill Sea Turtle, Kemp's Ridley Sea Turtle)</p>	<ul style="list-style-type: none"> • The Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006) would be implemented to protect Gulf sturgeon. • The Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006) would be implemented to protect in-water sea turtles. • Construction activities would be limited to the late summer, fall and winter months when sea turtles are less likely to be nesting and hatchlings are less likely to be leaving the nest. • The Seashore would increase turtle crawl and nest monitoring in areas between May 1 and Aug 31 in an effort to locate and identify all crawls, false crawls and nests. These nests would be marked for avoidance (following standard procedures) by foot traffic and vehicles. The Seashore fails to identify less than one nest in every two breeding seasons (personal communication with Mark Nicholas, Biologist, GUI, 8/27/2013); therefore, we anticipate being able to avoid all nests if asphalt removal must occur in sea turtle nesting habitats prior to November. • In areas where sea turtle nests are present, cleaning would not begin until after the nest hatches. • Vehicles and equipment would be driven to avoid nests by a minimum of 10 feet. • All construction personnel would be notified of the potential presence of sea turtles both on the beach and in the water and would be reminded of the need to avoid sea turtles. • All construction personnel would be notified of the criminal and civil penalties associated with harassing, injuring, or killing sea turtles. • In areas where adults or hatchlings could be present and vehicles or mechanical equipment maybe used, a pre-operational survey would be conducted to ensure no adults or hatchlings are present or in the path of the equipment. • All construction personnel will be trained/instructed as to what they are to do in the presence of a sea turtle. • Construction activities would occur during daylight hours and noise would be kept to the minimum feasible. • All ruts created during construction activities involving operation of mechanized equipment would be leveled in order to prevent entrapment of sea turtles. • All holes created from removal of material would promptly be filled in order to prevent entrapment of sea turtles.
<p>Proposed Critical Habitat Loggerhead</p>	<ul style="list-style-type: none"> • To avoid impacts to PCE 1 regarding relatively unimpeded nearshore access for nesting females and hatchlings, no work would be completed in the nearshore area until all known nests in the vicinity have hatched. In addition, Seashore staff would monitor for nests, crawls, and nesting females from May 1 and Aug 31 in an effort to locate and identify all crawls, false crawls and nests. • Short- term, temporary driving on the beach could compact sand. The driving would be between nesting seasons allowing for the full natural cycle of wind/rain erosion and accretion of sand to occur. Therefore, this project should not in any way change the nature of the sand in the project area (PCE 2). Instead, the project would improve the physical conditions of sand in the project area by removing foreign materials. The project would be sifted in place, thus not removing sand. • Work on this project would only occur during daylight hours and would therefore not affect the light regime needed for post-nesting females and hatchlings to orient to the sea.
<p>Piping Plover and Red Knot</p>	<ul style="list-style-type: none"> • All construction personnel would be instructed and trained in the protection of shorebirds and seabirds. • Construction personnel would be notified of the criminal and civil penalties associated with harassing, injuring, or killing shorebirds and seabirds. • Construction activities would be conducted in accordance with the Florida Fish and Wildlife Conservation Commission's guidelines. These guidelines were developed to protect nesting shorebirds and would be applied to foraging and roosting Piping Plover and Red Knot. • If piping plovers or red knots are present, work would not occur until the birds have moved from the area by 150 feet. • Construction noise would be kept to the minimum feasible. • All construction personnel would be notified that if equipment is left onsite overnight, a qualified biologist would walk around the equipment and look for signs of birds before moving the equipment, contacting a qualified biologist if signs of birds' presence are detected.

SPECIES/CRITICAL HABITAT	ACTIONS TO MINIMIZE IMPACTS
Piping Plover Critical Habitat	<ul style="list-style-type: none"> • The project would not remove sand from intertidal, sand, or mud flats. • The project would occur in very localized locations for very short periods of time, allowing for intact sand, mud, and algal flats, as well as surf-cast algae, back beach, salterns, spits and washover areas to remain nearby as others are disturbed.
Perdido Key Beach Mouse	<ul style="list-style-type: none"> • All construction personnel would be notified of the potential presence of Perdido Key beach mice (PKBM) and reminded of the criminal and civil penalties associated with harassing, injuring, or killing Perdido Key beach mice. • To minimize impacts to PKBM in burrows, a qualified biologist would survey the project site before work commences and flag potential burrows and tracks so that they can be avoided. • Only hand tools would be used within a five-foot radius of a burrow opening or any observed mice tracks. • Mechanized equipment would not be used to remove the materials within areas known to support beach mice. Small crews, guided by a biologist, may remove product with hand tools to some extent. • Equipment and vehicles would avoid the dune by 10 feet from the toe of the dune. • Construction noise would be kept to the minimum feasible. • Construction would occur during the day to minimize disturbance to nocturnal patterns. • Equipment, vehicles, and project debris would not be stored in a manner or location where it could be colonized by mice. • All construction personnel would be notified that if equipment is left onsite overnight, a qualified biologist would walk around the equipment and look for signs of mice before moving the equipment.
Perdido Key Beach Mouse Critical Habitat	<ul style="list-style-type: none"> • The project would occur in very localized locations for very short periods of time, allowing the mosaic of primary, secondary scrub vegetation and dune structure to remain unchanged. • When plants are destroyed during the project, appropriate native plants would be planted in the same location to minimize effects to the vegetative composition of the area. • Only hand tools would be used within the dunes, reducing possible impacts to burrows and reactions to noise and vibration. • No mechanized equipment would be used or left in the dunes. • Project work would only occur during daylight hours, as such the project would not alter the natural light regime of the area.
West Indian manatee	<ul style="list-style-type: none"> • All construction personnel would be notified of the potential presence of West Indian manatee in the water and reminded of the criminal and civil penalties associated with harassing, injuring, or killing West Indian manatees. • All workers would be educated that there could be West Indian manatees in the water and would be advised to look for manatees and, if observed, wait until manatees leave the area to put the equipment in the water. • In-water construction activities would be limited to the late summer, fall and winter months when West Indian manatees are less likely to be present within the construction area. Care would be taken when lowering equipment into the water and the sediment in order to ensure that no harm is caused to West Indian manatee that may potentially be in the water within the construction area. • Should a West Indian manatee come within 50 feet of the project area during construction activities, work would immediately cease until the West Indian manatee has moved away from the project area on its own. • Construction noise would be kept to the minimum feasible.

Migratory Birds and Bald Eagles

Affected Resources

More than 300 species of birds have been recorded at Gulf Islands National Seashore. Bird species utilize the project area for resting, nesting, foraging, wintering, or migratory rest stops (NPS 2006). Birds in the area include songbirds, waterfowl, wading birds, birds of prey, and shorebirds. To protect nesting shorebirds, the Seashore temporarily closes nesting areas above the beach for specific time periods each year (NPS 2011a). During nesting season (March through August), Seashore biologists locate, count, and monitor nests of the least tern (*Sterna antillarum*), snowy plover (*Charadrius alexandrinus tenuirostris*), black skimmer (*Rhynchops niger*), and other shorebirds. Table 12-8 identifies the types of species common on the seashore and the habitats and behaviors exhibited by these groups while present. As part of their overall consultation, DOI coordinated with the USFWS regarding the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Agreed-upon conservation measures to minimize impacts to birds in the project area can be found in Table 12-9.

In late 2004, Hurricane Ivan caused extensive storm surge and flooding on Santa Rosa Island. The majority of Seashore lands located on Santa Rosa Island were washed over (i.e., dunes washed away, leaving large open areas of flat, non-vegetated terrain). These flat areas of the Seashore temporarily became habitat for nesting shorebirds such as plovers, terns, skimmers, and gulls (NPS 2006). While natural successional processes are resulting in the island ecosystem reaching equilibrium, including re-vegetation, which has decreased the area of preferred nesting habitat, the Fort Pickens Area still contains broad expanses of open habitat ideally suited for nesting shorebirds.

Table 12-8. Types of bird species common to the project area, their behaviors, and potential impacts to them.

SPECIES*	BEHAVIOR	SPECIES/HABITAT IMPACTS
Wading birds (herons, egrets, ibises, wood stork, American flamingo)	Foraging, feeding, resting, roosting, nesting	Wading birds primarily forage and feed at the water's edge. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily nest and roost in trees or shrubs (e.g. pines, <i>Bacchurus</i> and mangroves), which occur outside the project area. In addition, this project would not take place during nesting season; therefore this project is not anticipated to impact nesting.
Shorebirds (plovers, oystercatchers, stilts, sandpipers)	Foraging, feeding, resting, roosting, nesting	Shorebirds forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily nest and roost in the dunes. However, this project would not take place during nesting season; therefore it is not anticipated to impact nesting.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Foraging, feeding, resting, roosting, nesting	Seabirds forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily roost in the dunes. However, this project would not take place during nesting season; therefore it is not anticipated to impact nesting.

SPECIES*	BEHAVIOR	SPECIES/HABITAT IMPACTS
Raptors (osprey, hawks, eagles, owls)	Foraging, feeding, resting, roosting, nesting	Raptors forage, feed, and rest in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. Most raptors are aerial foragers and soar long distances in search of food. The areas in the Seashore where these birds roost and nest are not within the project area.
Goatsuckers (nighthawks, whip-poor-will, Chuck-will's widow)	Foraging, feeding, resting, roosting, nesting	Goatsuckers forage, feed, rest, and roost in the project area. However, they are nocturnal/crepuscular and therefore not active during the project work period. They nest in thickets and woodlands, which are not included in the project area. In addition, this project would not take place during nesting season; therefore it is not anticipated to impact nesting.
Waterfowl (geese, swans, ducks, loons, and grebes)	Foraging, feeding, resting, roosting, nesting	Waterfowl forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily roost and nest in low vegetation. However, this project would not take place during nesting season; therefore it is not anticipated to impact nesting.
Doves and pigeons	Foraging, feeding, resting, roosting	Doves and pigeons could forage, feed, rest, and roost in the project area. However, they are unlikely to utilize sandy habitat. In addition, this project would not take place during nesting season; therefore it is not anticipated to impact nesting.
Rails and coots	Foraging, feeding, resting, roosting, nesting	Rails and coots forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. However they are most likely to favor marshy areas. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting if disturbed by the project. These birds primarily roost and nest in marshes, which are not within the project area. In addition, this project would not take place during nesting season; therefore it is not anticipated to impact nesting.
<p>*Gulf Islands National Seashore lists 345 species of birds known to occur there. The above table lists species guilds and the genus type for those most likely to occur in the project area. The full list of species occurrences can be found at: http://www.nps.gov/guis/naturescience/loader.cfm?csModule=security/getfile&pageID=525505</p>		

Bald Eagles

Bald eagles are known to nest within 1 mile of the project site (FDEP, personal communication, September 26, 2013). Based on the distance from proposed project activities, nesting of the known occurrences of bald eagle would not be impacted. However, if a bald eagle nest were observed in the vicinity of the project site, conservation measures to protect bald eagles would be implemented (see Chapter 6 for specific measures). To minimize potential for impacts to nesting bald eagles, the consultation protection measures may include 1) addressing prescribed nest tree protection zones, and 2) preparation of a bald eagle nest protection plan (including nesting behavior disturbance monitoring). Bald eagles have been known to tolerate certain potential disturbances in their breeding territories. Should these conservation measures be implemented for active nest sites adjacent to enhancement activities in the project area, potential impacts to the bald eagle would be short-term and minor. The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on

large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008).

Environmental Consequences

No bald eagles nest within or adjacent to the Seashore; therefore, no impacts to this species are expected. The Seashore prohibits all activity in and around nesting migratory birds. Therefore, no impacts to any nesting birds, eggs, chicks, or fledglings would occur. Outside of nesting season, in the short-term, beach enhancement efforts would likely impact birds in the area of construction activities due to general human disturbance and increased noise. These species are expected move away from areas of active construction to other adjacent areas and resume normal foraging, resting, and loafing behaviors. There is sufficient suitable feeding and resting habitat available along the beaches surrounding the project areas to support additional bird use. In addition, conservation measures would be implemented to minimize impacts to migratory birds from the project to the maximum extent practicable (Table 12-9). Therefore, impacts would be short-term and minor. There would be small, long-term beneficial effects to bird habitat as a result of this project as the asphalt would be removed and would not interfere with breeding, foraging, resting, or other normal behaviors.

Table 12-9. Types of bird species common to the project area and the conservation measures which would be taken to minimize potential impacts to them.

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Wading birds (herons, egrets, ibises, wood stork, American flamingo)	Care would be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbance would be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project would occur during daylight hours only. Nesting would not be impacted because the project would not occur during nesting season.
Shorebirds (plovers, oystercatchers, stilts, sandpipers)	Care would be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbance would be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project would occur during daylight hours only. Nesting would not be impacted because the project would not occur during nesting season.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Care would be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbance would be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project would occur during daylight hours only. Nesting would not be impacted because the project would not occur during nesting season.
Raptors (osprey, hawks, eagles, owls)	No work would occur within 500 feet of any bald eagle nests. Care would be taken to avoid working near other raptor nests, and to minimize noise and vibration in their vicinities. Roosting should not be impacted because the project would occur during daylight hours only, and because the areas where these birds nest are not within the project area. A staff biologist would advise the contractor of the nesting status of all identified raptor nests near the project area and approve of work in the vicinity.
Goatsuckers (nighthawks, whip-poor-will, Chuck-will's widow)	All work would be done during daylight hours. These birds are nocturnal/crepuscular and as such, should not be foraging or feeding while work occurs. Care would be taken to minimize noise and vibration near habitat where these birds are resting or roosting. Nesting would not be impacted because the project would not occur during nesting season.

SPECIES/SPECIES GROUP	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Waterfowl (geese, swans, ducks, loons, and grebes)	Care would be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbance would be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project would occur during daylight hours only. Nesting would not be impacted because the project would not occur during nesting season.
Doves and pigeons	It is unlikely that doves and pigeons would be impacted by this project.
Rails and coots	Care would be taken to minimize noise and vibration near areas where foraging or resting birds are encountered. All disturbance would be localized and temporary. The general behavior of these birds is to mediate their own exposure to human activity when given the opportunity. Roosting should not be impacted because the project would occur during daylight hours only. Nesting would not be impacted because the project would not occur during nesting season.

Non-Native Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possibly expand out into adjacent areas after their initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present and prevent the introduction of new invasive species due to the project would be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. Other measures that could be implemented are identified in Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short-term and minor.

12.3.5.4 Human Uses and Socioeconomics

12.3.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

The population of Escambia County was 302,715 in 2012 and accounted for 1.6 percent of the state's total population. In 2013, median household income in Escambia County was \$40,917, which was approximately seven percent lower than the median household income in the State of Florida. Escambia County contains both minority and low-income populations; however, as noted in the introduction to this chapter, no communities of environmental justice concern are located adjacent to the project area.

The Fort Pickens Area of the Seashore provides numerous types of visitor experience that allow for enjoyment of the Seashore resources across a broad range of socioeconomic groups. Approximately 32,000 Seashore senior citizen visitors gain access through a Golden Age Passport each year, which

accounts for approximately 4 percent of total visitation (NPS 2006). The Seashore provides a “Beach Wheel Chair” for the physically disabled; approximately 150 people utilize this service each summer season. The Fort Pickens Area takes in approximately \$1.2 million a year in entry and campground fees. Collecting this money employs 10 permanent and 5 seasonal staff. The Fort Pickens Area contains two food retail sites, generating in excess of \$250,000 gross revenue and \$10,500 income to the Seashore, and employing six people (NPS 2006). Much of the Seashore’s visitation has traditionally come from people wishing to visit the Fort Pickens Area. The existence of the Fort Pickens Area has a significant economic impact to nearby communities, including Pensacola, Pensacola Beach, Gulf Breeze, and Navarre Beach. Each of these communities derives important economic benefits from persons who stop to shop or seek lodging while visiting. Of the \$1.2 million the Fort Pickens Area takes in, approximately \$450,000 goes to the collection of fees and approximately \$500,000 goes toward repair and maintenance of Seashore infrastructure, improvements to visitor use areas, and programs. This money is returned to the local economy.

Environmental Consequences

A socioeconomic analysis regarding beach enhancements showed that approximately 6.67 jobs, \$397,000 in local economic output and \$315,000 in local labor income would be generated per million dollars of proposed project funds spent (DOI, 2012). The proposed project is anticipated to spend \$10,836,055 and as such could result in approximately 72.3 jobs being created, \$4,301,892 in local economic output, and \$3,413,340 in labor income, resulting in short-term beneficial impacts to the local economy. There would be indirect beneficial effects to the local economy due to the potential for increased recreational and tourist activity in response to beach enhancement projects. These economic benefits would flow towards the Seashore as well as local service and retail industry sectors. Beneficial economic effects would accrue to local recreational supply retailers, restaurants, and hospitality providers. The proposed project would not adversely affect any low income or minority populations since these populations do not reside in or near the project area. Overall, no adverse impacts would occur to socioeconomics and environmental justice as a result of the proposed project.

12.3.5.4.2 Cultural Resources

Affected Resources

For this component of the proposed project, the “area of potential effect” consists of the beach enhancement project area identified in Figure 12-5, Figure 12-6, and Figure 12-7. This project is currently being reviewed under Section 106 of the NHPA to identify any historic properties located within the project area and to evaluate whether the project would affect any historic properties. A 2006 archeological investigation of a portion of the project area found three midden sites potentially eligible for listing in the National Register⁹. While the Section 106 review process is ongoing, an initial review of the project indicates that a historic property may exist within the project area.

Environmental Consequences

⁹ The Draft PEIS/DERP stated there were eight sites in the area of potential effect. Mistakenly included in that number were five sites that are within the Seashore boundary, but *not* within the project area.

A complete review of this project under Section 106 of the NHPA is ongoing and would be completed prior to any project activities that would restrict consideration of measures to avoid, minimize or mitigate any adverse effects on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.3.5.4.3 Infrastructure

Affected Resources

Infrastructure for the purpose of this analysis includes both transportation and utility networks. Vehicle use (for both transportation and maintenance) constitutes the primary source of energy consumption in the project area.

Environmental Consequences

Based on the nature of the beach enhancement project there would be no changes to infrastructure or additional public utility requirements. A solid waste management plan would be implemented to manage the collection, recycling and disposal of asphalt, road-base materials and non-project-related waste generated during implementation activities. Existing roads would be used to access the project area. The project would use fuels but would not prevent access to any known energy resources in the project vicinity, such as coal, oil, or natural gas.

There would be short-term minor impacts to infrastructure as a result of this project in that the equipment transiting the road between clean-up sites could cause minor traffic jams.

12.3.5.4.4 Land and Marine Management

Affected Resources

Except for the areas just east of the Fort Pickens and Santa Rosa project areas and just west of the Perdido Key project area, the three project areas are devoid of commercial or private development and consist of open beach and dune. The Pensacola Bay and Santa Rosa Sound border the project area to the north and the Gulf of Mexico borders the project to the south. The proposed project area is currently used for recreational activities and is managed by the NPS.

Environmental Consequences

Under the Coastal Zone Management Act of 1972, the selection of early restoration projects must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with public review of the Phase III DERP/PEIS on December 12, 2013 (Federal Trustees 2013). The State of Florida responded on February 28, 2014, concurring with the federal determination of consistency for purposes of the Phase III early restoration plan (Milligan 2014).

Under the proposed project, no changes would occur to the current land use at the project site or the adjoining shoreline areas or subtidal area. The area would remain in open space recreational use and land use and management authority at the Seashore would remain under the purview of the Seashore. Thus, no impacts would occur to Land and Marine Management under the proposed project.

12.3.5.4.5 Aesthetics and Visual Resources

Affected Resources

The project area primarily consists of open sandy wind beach, dunes, vegetation, and scattered asphalt and road-base materials throughout. The topography of the area is flat to gently sloping. Except for some vehicular traffic and some boats and airplanes, the project area is a natural and generally appealing landscape and soundscape. Over the last decade or so, however, visitors have complained to Seashore staff about the negative impacts of the asphalt and road base fragments on their aesthetic experience of the Seashore. The once white sandy beach is no longer as white as it once was and now contains these dark foreign materials in addition to the sand.

Environmental Consequences

Short-term impacts to visual resources would result from implementing the proposed project components. Large construction equipment such as backhoes would temporarily obstruct the shoreline views for visitors and recreational users at the site. These short-term project implementation-related impacts would be minor. Upon completion of asphalt and road base removal, beneficial impacts to aesthetics and visual resources throughout the project area would be long-term.

12.3.5.4.6 Tourism and Recreational Use

Affected Resources

Beach access is a major expectation of Seashore visitors. The access routes take the traveler through dunes of white sand along the shores of the Gulf of Mexico and Santa Rosa Sound, a terrain of striking beauty. The fort is a destination to many visitors, and guided fort tours are offered daily during summer months. As mentioned above, over the last decade or so, a number of visitors to the different project areas have commented on the scattering of asphalt and the detriment of the asphalt to the overall Seashore experience as a natural area.

In the four years prior to Hurricane Ivan (2000-2003), annual attendance in the Fort Pickens Area averaged approximately 682,000 visitors (NPS 2011a). After Hurricane Ivan damaged Fort Pickens Road on September 16, 2004, visitation to the Fort Pickens Area fell to virtually zero. Since the road reopened in May 2009, visitation has returned to levels similar to those prior to Hurricane Ivan, although it dropped again after the *Deepwater Horizon* oil spill.

Environmental Consequences

During the project period, recreational experience would be impacted from noise and visual disturbances associated with the use of heavy equipment; the use of some areas by visitors could be impacted. While these temporary inconveniences would result in minor short-term impacts on tourism and recreational use during the project, impacts would be kept low by implementing the project during the slowest part of the tourist season – i.e., late summer, fall, and winter – and because other nearby areas will continue to be available. It is expected that the removal of asphalt would result in a long-term beneficial impact to overall visitor experience by allowing users to experience the site in its natural state.

12.3.5.4.7 Public Health and Safety and Shoreline Protection

Affected Resources

No hazardous materials currently exist at the project site where the potential for human exposure presents a substantial risk. The Seashore is situated along an area of stable coastline not prone to significant shoreline erosion under normal conditions. Other natural hazards do not occur in any great abundance within the boundaries of the Seashore.

Environmental Consequences

No direct or indirect impacts on public health and safety would occur as a result of the proposed project. No hazardous waste would be created during removal. All hazardous materials (e.g., diesel fuels) handled during removal would be contained and appropriate barriers would be in place to ensure the protection of adjacent water resources from potential spills and leaks. Personal protective equipment would be required, as appropriate, for all construction personnel and authorized access zones would be established, if needed, at the perimeter of the project site during implementation. As a result, no impacts to public health and safety would occur from the implementation of the proposed project. There would be, however, a small beneficial effect on public health and safety with the removal of the asphalt fragments from both the open beach and in-water areas; the material currently poses tripping hazards in some cases and some risk of abrasions on bare feet.

12.3.6 Summary and Next Steps

The proposed Beach Enhancement at Gulf Islands National Seashore project involves removing fragments of asphalt and road-base material (limestone aggregate and some chunks of clay) that have been scattered widely over the Fort Pickens, Santa Rosa, and Perdido Key areas of the Florida District of Gulf Islands National Seashore, managed by the National Park Service, and replanting areas, as needed, where materials are removed. The asphalt- and road-base-covered conditions are clearly unnatural and impact the visitor experience both aesthetically and physically in these National Seashore lands. This project would enhance the visitor experience in the cleaned-up areas. The project is consistent with Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

Final NEPA analysis of the environmental consequences suggests that while minor adverse impacts may occur to some resource categories, and short-term moderate impacts may occur to soundscapes during project implementation, no major adverse impacts are anticipated to result. The project would enhance and increase the public's use and enjoyment of the natural resources by improving the beach at the Gulf Islands National Seashore. The Trustees have considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees determination on the selection of the project will be included in the Record of Decision.

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12.4 Gulf Islands National Seashore Ferry Project: Project Description

12.4.1 Project Summary

The proposed DOI Ferry project involves the purchase of up to three ferries to be used to ferry visitors (no automobiles) between the City of Pensacola, Pensacola Beach, and the Fort Pickens area of the Gulf Islands National Seashore (Seashore) in Florida. The need for an alternative means to access the Fort Pickens area of the Seashore was made especially apparent when hurricanes and storms in 2004 and 2005 destroyed large segments of the road, eliminating vehicle access through this eight-mile-long area. A viable ferry service to this area of the Seashore would allow visitors to enjoy the Seashore not only if the road were to be destroyed again, but also by providing alternative options for visitor access. Operational responsibility for the boats (i.e., all aspects of the ferry service including preparing a business plan, staffing, ticket sales, vessel maintenance and repairs, insurance, licensing, getting regular inspections, etc.) has not yet been determined but would likely be either Escambia County or the National Park Service (or their contractor). The determination would be made by the ferry service stakeholders and would be based on several factors, including adequacy of staffing, experience, institutional stability, etc. Regardless of the operator, however, all BMPs described in this Environmental Review would be followed such that impacts to all stakeholders' trust resources are protected. The estimated cost for this project is \$4,020,000.

12.4.2 Background and Description

This project would fund the purchase of up to three ferries to be used to ferry visitors (no automobiles) between the City of Pensacola, Pensacola Beach, and the Fort Pickens area of the Seashore in Florida. It also involves the connected but separate actions of: constructing two passenger queuing areas (one with a small ticketing facility); constructing a floating dock, a landing, and a ramp between the two in one area; and constructing a dock that is fixed to and extending from an existing pier in another area. Council on Environmental Quality (CEQ) regulations require connected actions¹⁰ to be analyzed in the same NEPA analysis as a proposed action (40 C.F.R. §1508.25(a)1). These connected actions would not utilize funds from this proposed project, but rather would be undertaken with separate funding by a non-federal partner. Should the ferries be delivered before the docks are funded or completed, DOI has identified the interim option of docking the ferries at the existing Plaza de Luna marina, and operating the ferries from the existing docks at Plaza de Luna marina and Quietwater Beach (and the Fort Pickens pier as originally planned).

A "Fort Pickens Pier and Ferry Service Environmental Assessment" (EA) was completed in 2011; however, that document did not address the connected actions described above. That EA and its corresponding Finding of No Significant Impact (FONSI) analyzed the potential impacts of the ferry service and now-complete Fort Pickens pier construction project (NPS 2011). The EA and FONSI determined the selected action (Alternative C: Construct a New Fixed Pier Along the Fort Pickens

¹⁰ The National Park Service defines connected actions as those that are "closely related" to the proposal and alternatives. Actions are connected if they automatically trigger other actions that may have environmental impacts; they cannot or will not proceed unless other actions have been taken previously or simultaneously; or they are interdependent parts of a larger action and depend on the larger action for their justification (NPS Director's Order 12 Handbook).

Seawall, which includes the ferry operation) would not have significant adverse impacts to public health, public safety, threatened or endangered species, or other unique characteristics of the region. Based on the evaluation of the impact of that proposed action on aspects affecting the quality of the human environment, the EA and FONSI determined that an Environmental Impact Statement was not required. The following Affected Resources and Environmental Consequences sections do not address the actions and topics covered in the 2011 Environmental Assessment, but rather cover only the connected actions of constructing the two new ferry docking and passenger facilities and the operation of the ferries around those facilities.

The need for an alternative means to access the Fort Pickens area of the Seashore was made especially apparent when hurricanes and storms in 2004 and 2005 destroyed large segments of the road, eliminating vehicle access through this eight-mile-long area. For five years the only means of visitor access to this area was by foot, bicycle, private boat, or limited Commercial Use Authorization permits. This severely restricted access to the Seashore for everyone, especially those with disabilities, the elderly, and the very young.

To address the need for alternative public access, the 2009 “Fort Pickens/Gateway Community Alternative Transportation Study” examined transportation alternatives to this area and determined that a ferry service to the Seashore’s Fort Pickens area from the City of Pensacola and Pensacola Beach would be appropriate. The study also found that if the financial burden of purchasing the ferries could be removed from the ferry service operator, the service would be much more viable financially. This Early Restoration project would allow that by purchasing up to three ferry boats and making those available free of cost to the ferry service operator, who thereafter would be responsible for their maintenance costs. A viable ferry service to this area of the Seashore would allow visitors to enjoy the Seashore not only if the road were to be destroyed again, but also while the road is still there by providing additional visitor access to the Seashore that otherwise would not exist. In so doing, this project would partially restore the visitor use that was lost at the Seashore due to the Spill.

Each ferry would carry up to 149 passengers (see Figure 12-20) and two would operate daily during the peak summer season (mid-May through mid-August), with each making three (or so) trips per day. Ferry operation is expected to be reduced during the off-peak season. The annual duration of ferry operation would be approximately eight months. The ferries would make three stops: City of Pensacola (at a new dock adjacent to Plaza de Luna in Pensacola Harbor), Pensacola Beach (at a new dock connected to the existing public pier at Quietwater Beach), and Fort Pickens within Gulf Islands National Seashore (at the newly constructed pier just east of the auditorium and museum). See Figure 12-21 below. The National Park Service would own the boats. The operating entity should be determined by early 2014, and would likely be either Escambia County or the National Park Service, either of which may contract the actual operation out to a separate entity. “Operation” means all aspects of the ferry service including staffing, ticket sales, vessel maintenance and repairs, acquiring insurance, licensing, etc. The final design of the ferries would be agreed upon by the interested parties, including the City of Pensacola, Escambia County, Santa Rosa Island Authority, and the National Park Service. Once the construction contract is awarded, the boats should be manufactured within approximately 12 months. The ferry vessels are expected to have an operational lifetime of 30 years.

Regarding the actions that are connected to the purchase of the ferries, the new boat dock and queuing area would be immediately adjacent to the City of Pensacola Plaza de Luna facility (see Figure 12-22 below). The ticketing facility, the other queuing area, and the pier extension would be at the Pensacola Beach Quietwater Beach facility (see Figure 12-23 below). These connected activities would not be paid for with the \$4,020,000 in project funds.

The queuing and ticketing facilities would be simple, functional structures that could be permanent, but might also be temporary. The structures would be located on already disturbed (e.g., concrete-, asphalt-, wood plank-, and/or landscape-covered) areas, or on the dock itself (in the case of the Quietwater Beach facility).

Preliminary indications are that the location of the floating boat dock and ramp near Plaza de Luna would likely be at the north end of the existing berth area or at the angled wall on the west side of that same area, either location requiring up to approximately 20 pilings be driven into the benthic substrate. The new dock at Quietwater Beach would require up to approximately 16 pilings, would be fixed to the existing public pier, and could be up to 100 feet in length. Additionally, there would be improvements to the existing dock, including railings being installed. The floating docks and ramp would be constructed off-site and delivered to the sites by barge. The landing would also be constructed off-site and would be delivered to the area either by truck or barge. Both docks would be constructed and installed by barge. No dredging in either area would be needed. The ferries would be moored at the City of Pensacola dock at night.

Should the ferries be delivered and ready for operation before the docks are funded or completed, DOI has identified the interim option of docking the ferries at the existing Plaza de Luna marina, and operating them from the existing docks at Plaza de Luna marina and Quietwater Beach (and the Fort Pickens pier as originally planned). At Quietwater Beach the same dock would be used but no improvements or alterations would be made to it, nor would any on-land facility improvements or alterations be made to accommodate the additional flow of ferry passengers to the area.

At Plaza de Luna the existing dock at the marina (immediately west of the eventual new dock site) would be temporarily used but no improvements or alterations would be made to it, nor would any on-land facility improvements or alterations be made to accommodate the additional flow of ferry passengers to the area. (Use of the marina would be subject to an agreed-upon lease which would ensure that there would be no unacceptable impacts to marina facilities and which would end once the permanent docking facilities improvements were ready).



Figure 12-20. Example of a 149-passenger catamaran ferry.

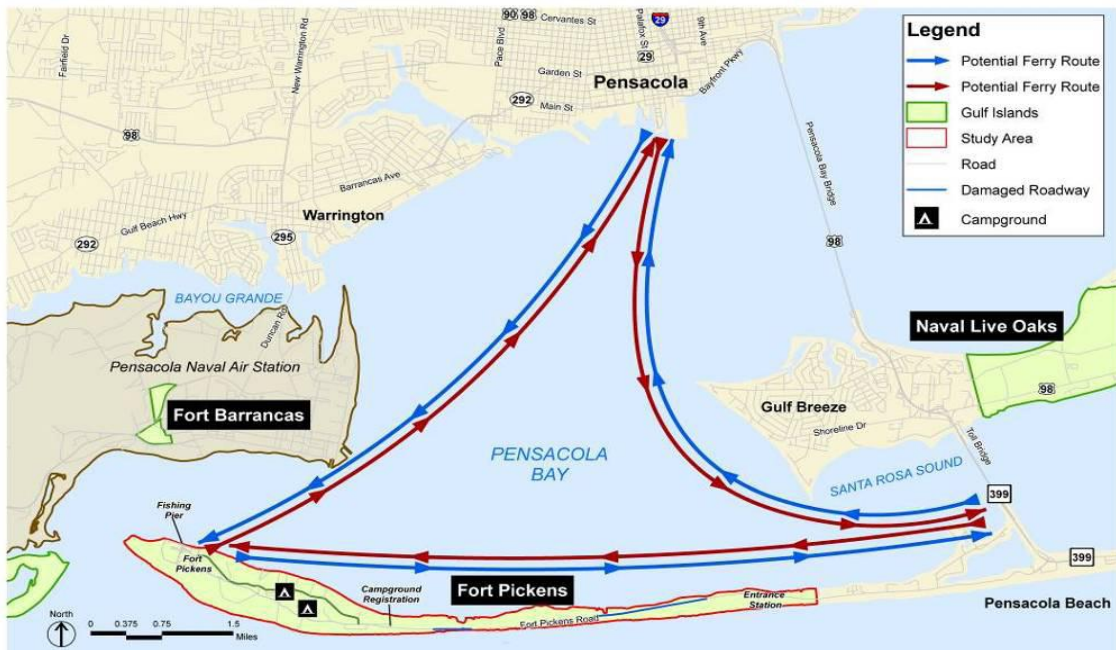


Figure 12-21. Routes and destinations for the ferry system.



Figure 12-22. City of Pensacola connected actions approximate area next to (in the basin just east of) Plaza de Luna facility where parking lot, landing, ramp, dock and passenger queuing area would be.



Figure 12-23. Pensacola Beach's connected actions approximate area (blue rectangle) at Quietwater Beach where a new floating dock and queuing/ticketing structures would be.

12.4.3 Evaluation Criteria

This proposed project meets the evaluation criteria established by OPA and the Framework Agreement. Visitor use of the Seashore was lost due to the Spill and this project would restore some of that use by providing ferries so that a successful ferry service could be established for visitors to use. (See 15 C.F.R. § 990.54(a)(2) and also 6(a-c) of the Framework Agreement). The project is designed to restore lost visitor use of the Seashore during the Spill, and would benefit other natural resources and services to the extent the ferry service reduces vehicular traffic and associated adverse effects, such as emissions. This restoration project has a clear nexus to the injuries caused by the Spill. (See 15 C.F.R. § 990.54(a)(5)).

The project is technically feasible and utilizes proven techniques with established methods and documented results. The National Park Service utilizes alternative transportation such as ferries, shuttles, and trams at many of its units, with such conveyances often being operated by a concessionaire. The Seashore's General Management Plan supports the establishment of a ferry service in the Pensacola Bay area. In addition, there is long standing support from other regional entities including The Santa Rosa Island Authority, the regional metropolitan planning organization, and the local transit authority.

The project cost is based on several quotes received from boat manufacturers. Project expenses are straightforward since they almost exclusively involve the cost to have the boats manufactured. Thus, the project can be conducted at a reasonable cost. (See C.F.R. § 990.54(a)(1)).

A thorough environmental review, including review under applicable environmental statutes and regulations, is described in section 12.4, indicates that adverse effects from the project would largely be minor and extremely localized. In addition, the best management practices and measures to avoid or minimize adverse effects described in 12.4 would be implemented. As a result, collateral injury would be avoided and minimized (15 C.F.R. § 990.54(a)(4)).

The likelihood of project success is high since ferry boat design and construction is commonplace and ordering and purchasing the ferries is a straightforward transaction. Also, with regard to the ferry service, the 2009 Alternative Transportation Study found that as long as the operator of the ferry business did not have to purchase the actual ferry boats, the ferry service would likely be commercially successful. Finally, the construction of the new docks and passenger facilities, although not part of the proposed restoration project, are very straightforward actions and the interim docking option is available should the ferries be completed before the new docks. (See 15 C.F.R. § 990.54(a)(3) and also 6(e) of the Framework Agreement).

For these reasons, the project is considered feasible and cost effective. It is believed that the project would not be inconsistent with long-term restoration needs. (See C.F.R. § 990.54(a)(1),(3), and Sections 6(d)-6(e) of the Early Restoration Framework Agreement).

12.4.4 Performance Criteria, Monitoring and Maintenance

The restoration objective of this project is to restore a portion of the lost visitor use of the Seashore caused by the Spill. The success criteria for the project would be met if construction of the ferries is completed as specified, on schedule, and on budget. Visitor use of the ferries would be monitored through annual compilations of ridership statistics and through the use of existing park protocols for

gathering visitor feedback. These existing protocols include the routine use of visitor comment card surveys and the collection of annual ridership statistics.

Regular boat maintenance would be the responsibility of the entity operating the service and would be funded by ongoing ticket sales.

12.4.5 Offsets

The Trustees and BP negotiated a BCR of 2.0 for this proposed recreational use project. NRD Offsets are \$8,040,000 expressed in present value 2013 dollars to be applied against the monetized value of lost recreational use provided by natural resources injured on DOI lands in Florida, which would be determined by the Trustees' assessment of lost recreational use for the Spill. Please see Chapter 7 of this document (Section 7.2.2) for a description of the methodology used to develop monetized Offsets.¹¹

12.4.6 Cost

The total estimated cost to implement this project is \$4,020,000. This cost reflects current cost estimates developed from the most current information available to the Trustees at the time of the project negotiation. The cost includes provisions for planning and engineering and design of the ferries, construction of the same, and performance monitoring of construction and annual ridership.

¹¹ For the purposes of applying the NRD Offsets to the calculation of injury after the Trustees' assessment of lost recreational use for the Spill, the Trustees and BP agree as follows:

- The Trustees agree to restate the NRD Offsets in the present value year used in the Trustees' assessment of lost recreational use for the Spill.
- The discount rate and method used to restate the present value of the NRD Offsets will be the same as that used to express the present value of the damages.

12.5 Gulf Islands National Seashore Ferry Project: Environmental Review

The proposed National Park Service (NPS), Gulf Islands National Seashore Ferry Purchase project would fund the purchase of up to three ferries¹² to be used to ferry visitors (no automobiles) between the City of Pensacola, Pensacola Beach, and the Fort Pickens area of Gulf Islands National Seashore in Florida. It involves the connected actions of: constructing two passenger queuing areas – one with a small ticketing facility; constructing a floating dock near Plaza de Luna, a landing, and a ramp between the two in one area; and constructing an additional floating dock at Quietwater Beach. These connected actions would *not* be funded with project funds.

A viable ferry service to this area of the Seashore would allow visitors to enjoy the Seashore if the road to Fort Pickens were destroyed and would allow additional visitor access to the Seashore that would otherwise not be available. This project would partially restore the visitor use lost at the Seashore due to the Spill. Operational responsibility for the boats (i.e., all aspects of the ferry service including preparing a business plan, staffing, ticket sales, vessel maintenance and repairs, insurance, licensing, getting regular inspections, etc.) has not yet been determined but would likely be either the City of Pensacola or the National Park Service (or subcontractors). The estimated cost for this project is \$4,020,000.

12.5.1 Introduction and Background

The need for an alternate means to access the Fort Pickens Area of the Seashore was made apparent when hurricanes and storms in 2004 and 2005 destroyed large segments of the road, eliminating vehicle access through this eight-mile-long area. For five years the only means of visitor access to this area was by foot, bicycle, private boat, or through limited Commercial Use Authorization permits. This severely restricted access to the Seashore for everyone, especially those with disabilities, the elderly, and the very young.

To address the need for alternative public access, the 2009 “Fort Pickens/Gateway Community Alternative Transportation Study” (NPS 2009a) examined transportation alternatives to this area and determined a ferry service to the Fort Pickens area from the City of Pensacola and Pensacola Beach would be appropriate. The study found that if the financial burden of purchasing the ferries could be removed from the ferry service operator, the service would be much more viable financially. This Early Restoration project would allow that by purchasing up to three ferry boats and making those available free of upfront cost to the ferry service operator, who thereafter would be responsible for their maintenance costs. A viable ferry service to this area of the Seashore would allow visitors to enjoy the Seashore not only if the road were to be destroyed again, but also while the road is still there by allowing additional new visitors access to the Seashore that they otherwise would not have. In so doing, this project would partially restore the visitor use that was lost at the Seashore due to the Spill.

A new dock was recently constructed near the visitor center in the Fort Pickens Historic District, per the selected action in the 2011 “Fort Pickens Pier and Ferry Service Environmental Assessment” (NPS, 2011). This dock consists of a 20-foot-wide, 260-foot-long pier for ferry use, an attached 60-foot pier for

¹² Actual number of ferries purchased will be based on the recommendation of the feasibility study currently underway and expected to be completed in October, 2013, and on the actual costs of the ferries.

Seashore administrative use, and associated ramps. A sheltered passenger waiting area/pavilion was also constructed near the walkway leading to the dock.

12.5.2 Project Location

The ferry service – analyzed in the 2011 *Fort Pickens Pier and Ferry Service Environmental Assessment* – is located in Pensacola Bay and would serve the City of Pensacola, Pensacola Beach, and the Fort Pickens area of Gulf Islands National Seashore (see Figure 12-21). One of the ferry docking points, also analyzed in the 2011 Environmental Assessment, has already been built.

The actions that are connected to the purchase of the ferry boat are the construction of docking and ferry passenger facilities and accommodations at the City of Pensacola near the Plaza de Luna marina and park, and at the Pensacola Beach Quietwater Beach area (see Figure 12-22 and Figure 12-23 above).

12.5.3 Construction and Installation

Once the construction contract is awarded, the boats would be manufactured within approximately 12 months. Regarding the actions that are connected to the purchase of the ferries, the new boat dock and queuing area would be immediately adjacent to the City of Pensacola Plaza de Luna facility (see Figure 12-22 above). The ticketing facility, the other queuing area, and the pier extension or floating dock would be at the Pensacola Beach Quietwater Beach facility (see Figure 12-23 above). These connected activities would not be paid for by the \$4,020,000 in project funds.

The queuing and ticketing facilities would be simple, functional structures that could be permanent, but might also be temporary. The structures would be located on already disturbed (e.g., concrete-, asphalt, wood plank-, and/or landscape-covered) areas.

Preliminary indications are that the location of the floating boat dock and ramp near Plaza de Luna would likely be the north end of the existing berth area or at the angled wall on the west side of that same area, either location requiring up to approximately 20 pilings be driven into the benthic substrate. The floating dock at Quietwater Beach would require approximately 16 pilings, would be attached to the existing public pier and could be up to 100 feet in length. Additionally, there would be improvements to the existing dock, including railings. The floating docks and ramp would be constructed off-site and delivered to the sites by barge. The landing would also be constructed off-site and would be delivered to the area either by truck or barge. Both docks would be constructed and installed by barge. No dredging would be needed.

12.5.4 Operations and Maintenance

Each ferry would carry up to 149 passengers (see Figure 12-20 above) and operate daily during the peak summer season (mid-May through mid-August), with each making three (or so) trips per day. Ferry operation would be reduced during the off-peak season. The annual duration of ferry operation would be approximately eight months. The ferries would make three stops: City of Pensacola (at a new dock adjacent to Plaza de Luna in Pensacola Harbor), Pensacola Beach (at a new dock connected to the public pier at Quietwater Beach), and Fort Pickens within Gulf Islands National Seashore (at the newly constructed pier just east of the auditorium and museum). The ferries would be moored at the City of Pensacola dock at night. It is anticipated that a third ferry, if purchased, would only be used as a backup if one of the two in use are out of commission for any reason.

Should the ferries be delivered and ready for operation before the docks are funded or completed, DOI has identified the interim option of docking the ferries at the existing Plaza de Luna marina, and operating the ferries from the existing docks at Plaza de Luna marina and Quietwater Beach (and the Fort Pickens pier as originally planned). At Quietwater Beach the same dock would be used but no improvements or alterations would be made to it, nor would any on-land facility improvements or alterations be made to accommodate the additional flow of ferry passengers to the area.

At Plaza de Luna the existing dock at the marina (immediately west of the eventual new dock site) would be temporarily used but no improvements or alterations would be made to it, nor would any on-land facility improvements or alterations be made to accommodate the additional flow of ferry passengers to the area. (Use of the marina would be subject to an agreed-upon lease which would ensure that there would be no unacceptable impacts to marina facilities and which would end once the permanent docking facilities improvements are ready).

The National Park Service would own the boats. The operating entity should be determined by early 2014, and would likely be Escambia County or the National Park Service, either of which may contract the actual operation out to a separate entity. ("Operation" means all aspects of the ferry service including staffing, ticket sales, vessel maintenance and repairs, insurance, licensing, etc.). The final design of the ferries would be agreed on by the interested parties, including the City of Pensacola, Escambia County, Santa Rosa Island Authority, and the National Park Service. The ferry vessels are expected to have an operational lifetime of 30 years.

Regular boat maintenance would be the responsibility of the entity operating the service and would be funded by ongoing ticket sales.

Visitor use in the form of ridership statistics would be monitored annually for this project.

12.5.5 Affected Environment and Environmental Consequences

Under the National Environmental Policy Act, federal agencies must consider environmental effects of their actions that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. The following sections describe the affected resources and environmental consequences of the project.

12.5.5.1 No Action

Both OPA and NEPA require consideration of the No Action alternative. For this Draft Phase III ERP proposed project, the No Action alternative assumes that the Trustees would not pursue this project as part of Phase III Early Restoration.

Under No Action, the existing conditions described for the project site in the affected resources subsection would prevail. Restoration benefits associated with this project would not be achieved at this time.

12.5.5.2 Physical Environment

12.5.5.2.1 Geology and Substrates

Affected Resources

The geology in the project area consists of the benthic substrate into which the dock pilings would be driven and the on-land developed areas that new facilities would be built on. The former consists of sandy substrate that is presumably degraded and contaminated to some extent due to the long-standing development and boat activity around it for so many years (this is especially true of the Plaza de Luna area). The latter consists of concrete, asphalt, or landscaped areas whose natural geological characteristics were lost years ago when these areas were developed.

Environmental Consequences

The ferry operation should have no impact on in-water or on-land geology or substrates at the City of Pensacola or Pensacola Beach ferry facilities. Construction of the new facilities, however, particularly driving pilings into the benthic substrate, would have long-term minor impacts there. The interim option of docking and operating the ferries from existing facilities would have no impacts on this resource. There should be no notable impacts to construction of facilities on land since these areas are already developed.

12.5.5.2.2 Hydrology and Water Quality

Affected Resources

The principal waterbodies associated with the project area are Pensacola Bay and Santa Rosa Sound. Pensacola Bay and Santa Rosa Sound surrounding the Santa Rosa Island area have been designated as Outstanding Florida Waters (OFWs), indicating these bodies of water are worthy of special protection due to natural attributes. An OFW is designated by the Florida Environmental Regulation Commission (ERC); once it is determined that the environmental, social, and economic benefits of the Special Water status outweigh the environmental, social, and economic costs (Rule 62- 302.700(5), FAC). The Florida Department of Environmental Protection (FDEP) is granted the authority by Section 403.061(27), FS, to establish rules for OFWs. The purpose of the designation as an OFW is to protect existing good water quality. FDEP will not issue permits for direct pollutant discharges to OFWs, which would lower ambient (existing) water quality, or for indirect discharge, which would significantly degrade the OFW.

The project area is located in the southwest part of Pensacola Bay at Pensacola Harbor and in the western end of Santa Rosa Sound near Quietwater Beach. Pensacola Bay has been impacted by numerous non-point and point pollution sources resulting in a reduction of natural biodiversity and productivity in the Bay. Non-point sources include urban stormwater runoff, agricultural runoff, marinas, boat traffic, the drainage of wetlands, and seepage of contaminated groundwater into surface waters. Point sources include effluent from two sewer outlets near Pensacola; septic systems on Gulf Breeze peninsula; a chemical plant and coal-fired electric power plant on the Escambia River; a paper mill on the Perdido River; the American Creosote Works hazardous waste site; the Port of Pensacola; and Pensacola NAS, which contains a number of hazardous waste sites (USACE, 2009 as cited in NPS, 2011). Most of these impacts are from the landward areas along Pensacola Bay.

The hydrological features of the project area, of course, are Pensacola Bay and Santa Rosa Sound. These features, outside of tidal influences and the effects of storms, are naturally stable due to their size.

Environmental Consequences

Best management practices, promulgated by the U.S. Department of Transportation and the operating permit, would dictate mitigation measures needed to control and minimize impacts to water quality from the ferry service at the project areas. The ferry service using the new docks (or the interim option of using the existing docks) would introduce additional vessel traffic; however, currently, recreational and commercial boating traffic is high in these areas. Therefore, minor and long-term impacts to water quality would be associated with the operation of the ferry service.

The installation of the two floating docks, ramp and landing could result in increased turbidity. These impacts on water quality should be short-term and minor. (The interim option of docking and operating the ferries from existing facilities will have no impacts on turbidity.) Additionally, the operation of the boats at these new docks, especially with fueling operations at one or both of them, could result in impacts to water quality in these areas. Some incidental amounts of fuel would enter the water during fueling. These impacts on water quality should be long-term and minor. The proposed discharge of dredged or fill material into waters of the United States, including wetlands, or work affecting navigable waters associated with this project is currently being coordinated with the U.S. Army Corps of Engineers (USACE) pursuant to the Clean Water Act Section 404 and Rivers and Harbors Act (CWA/RHA). The Jacksonville Corps District was contacted in 2013 for a preliminary discussion of the permitting process and needs associated with the construction of the two new docks. Continued coordination with USACE and final authorization pursuant to CWA/RHA will be completed prior to project implementation. Responsibility for this will lie with the entity that receives the funding for these “connected actions” and that oversees their construction.

Mitigation for fueling operations would include a Spill Prevention, Control, and Countermeasures (SPCC) Plan.

12.5.5.2.3 Air Quality and Greenhouse Gas Emissions

Affected Resources

In Table 12-10, below, both State of Florida and federal primary ambient air quality standards for criteria air pollutants are presented.

The USEPA proposed strengthening the air quality standards for ground-level ozone to 0.075 ppm in 2008. To attain this standard, the three-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. The 2006 to 2008 average of the fourth-highest daily maximum 8-hour ozone concentration for Pensacola was 0.079 ppm, and thus Escambia County would be designated as nonattainment according to the proposed 2008 ozone standard (USEPA 2009a).

Table 12-10. State and Federal Ambient Standards for Criteria Air Pollutants.

POLLUTANT	AVERAGING PERIOD	FEDERAL PRIMARY STANDARD	STATE OF FLORIDA STANDARD
Ozone	8-hour	0.075 ppm	Same as Federal
	1-hour (daily max.)	0.12 ppm	Same as Federal
PM2.5	Annual (arithmetic mean)	15.0 $\mu\text{g}/\text{m}^3$	Same as Federal
	24-hour	35 $\mu\text{g}/\text{m}^3$	Same as Federal
PM10	Annual (arithmetic mean)	NA	50 $\mu\text{g}/\text{m}^3$
	24-hour	150 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$
Carbon Monoxide	8-hour	9 ppm	9 ppm
	1-hour	35 ppm	35 ppm
Nitrogen Dioxide	Annual (arithmetic mean)	0.053 ppm	0.05 ppm
	1-hour	0.100 ppm	Same as Federal
Sulfur Dioxide	Annual (arithmetic mean)	0.03 ppm	0.02 ppm
	24-hour	0.14 ppm	0.10 ppm
	1-hour (per annum)	NA	0.40 ppm
	1-hour (per 7 days)	NA	0.25 ppm
	5-minute	NA	0.80 ppm
Lead	Rolling 3-month average	0.15 $\mu\text{g}/\text{m}^3$	Same as Federal
	Quarterly average	1.5 $\mu\text{g}/\text{m}^3$	Same as Federal
Total Suspended Particulate	Annual (geometric mean)	NA	60 $\mu\text{g}/\text{m}^3$
	24-hour	NA	150 $\mu\text{g}/\text{m}^3$

Escambia County, Florida has an annual fine-particle particulate matter (PM) concentration of 8.4 $\mu\text{g}/\text{m}^3$, which meets the national standard of 12 $\mu\text{g}/\text{m}^3$, and is slightly better than the national average of 9.20 $\mu\text{g}/\text{m}^3$. It also has an annual average sulfur dioxide concentration of 14 ppb, which meets the national sulfur dioxide standard of 75 ppb, and is slightly better than the national average of 19.00 ppb. There is currently no data available for Escambia County regarding carbon monoxide, nitrogen oxide, or lead levels (<http://air-quality.findthedata.org/l/159/Escambia-County>, 2013). Additionally, no trend analysis data is available for visibility, ammonium, nitrate, or sulfate parameters for the Seashore (NPS, 2013).

In 2013, Escambia County was in attainment of the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants as designated by the USEPA.

Greenhouse Gases (GHGs) are chemical compounds found in the Earth's atmosphere that absorb and trap infrared radiation as heat. Global atmospheric GHG concentrations are a product of continuous emission (release) and removal (storage) of GHGs over time. In the natural environment, this release and storage is largely cyclical. For instance, through the process of photosynthesis, plants capture atmospheric carbon as they grow and store it in the form of sugars. Human activities such as deforestation, soil disturbance, and burning of fossil fuels disrupt the natural cycle by increasing the GHG emission rate over the storage rate, which results in a net increase of GHGs in the atmosphere. The principal GHGs emitted into the atmosphere through human activities are CO₂, methane, nitrous oxide,

and fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (USEPA 2010). CO₂ is the major GHG emitted, and the burning of fossil fuels accounts for 81 percent of all U.S. GHG emissions (USEPA 2010). Currently GHG emissions are not monitored or collected at the Seashore.

Environmental Consequences

Dock construction would require the use of barges, construction/installation equipment, and ferries. The floating docks and ramp would be constructed off-site and delivered to the sites by barge. The landing would also be constructed off-site and would be delivered to the area either by truck or barge. The docks would be installed by barge. No dredging would be expected. This would temporarily affect air quality and elevate greenhouse gas emissions in the project vicinity due to emissions from the equipment and the ferries. Any air quality impacts that would occur would be localized, and limited by the size of the project. Therefore, impacts to air quality would be minor and short-term. Due to the emissions of the ferry boats themselves, the proposed project would have long-term minor impacts on air quality at the City of Pensacola and Pensacola Beach docking facilities.

Engine exhaust from the ferries, the barge, and the construction/installation equipment would contribute to an increase in greenhouse gases. Table 12-11 describes the likely greenhouse gas emission scenario for the implementation of this project.

Table 12-11. Expected greenhouse gas emissions resulting from the project.

CONSTRUCTION EQUIPMENT	NO. OF HOURS OPERATED	CO ₂ (METRIC TONS)	CH ₄ (CO ₂ E) (METRIC TONS) ¹³	NOX (CO ₂ E) (METRIC TONS)	TOTAL CO ₂ EQUIVALENT (METRIC TONS PER YEAR)
Pickup Truck	80 ^a	0.48	0.0003	0.003	0.48
Barge ^b	80 ^c	32	0.09	0.36	32.3
Pile Drivers ^d	80 ^e	1.17	0.0009	0.009	1.17
Ferries (2)	3,840 ^f	2,160	4.8	19.2	2,184
TOTAL	4,080	2,194	4.89	19.57	2,218
^a Assuming 24 hours of operation for the pickup truck ^b Because no greenhouse gas emission information is known for barges, the emissions from a tugboat was used for this analysis ^c Assuming the barge would run for 16 hours ^d Because no greenhouse gas emission information is known for pile drivers, the emissions from a grader was used for this analysis ^e Assuming 24 hours of operation for the pile drivers ^f Assuming 2 ferries, operating 8 hours a day for 8 months					

Based on the assumptions described in Table 12-11 above, and the small scale and short duration of the construction portion of the proposed project, predicted greenhouse gas emissions would be short-term and minor and would not exceed the 25,000 metric tons per year put forth by the Council on Environmental Quality (CEQ) as a level above which to conduct a detailed analysis of said emissions (CEQ, 2010). For the ferry operation impacts to air quality and GHG from emissions would be long-term and minor. If the interim docking option occurs, the impacts would be the same as those of the ferry operation only (i.e. , long-term only, not short-term), as no construction would be necessary.

¹³ CH₄ and NOx emissions assumptions and CO₂e calculations based on EPA 2011

12.5.5.2.4 Noise

Affected Resources

Noise can be defined as unwanted sound, and noise levels and impacts are interpreted in relationship to its effects on nearby residents or organisms. Noise associated with recreational uses, such as boating, can be of concern to surrounding communities. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum. Table 12-12 presents some familiar sounds and their decibel levels.

Table 12-12. Familiar sounds and their decibel levels (dB).

SOUND	DECIBEL LEVEL (DB)
Whisper	30
Normal Conversation	50-65
Vacuum cleaner at 10 feet	70
Midtown Manhattan Traffic Noise	70-85
Lawnmower	85-90
Train	100
Nearby Jet Takeoff	130
Source: Occupational Safety and Health Administration 2012.	

For the in-water pile driving portion of the project, impulsive noises could be somewhere in the range of 154-196 dB re:1 uPa zero-to-peak level, and 176 dB re:1 uPa RMS level (Laughlin, 2006).

The primary sources of ambient (background) noise in the project area are operation of vehicles, commercial and recreational vessels, the nearby Pensacola Airport, and natural sounds such as wind and wildlife. The levels of noise in the project area varies, depending on the season and/or the time of day, the number and types of sources of noise, and distance from the sources of noise. Noise levels in the project dock areas are primarily from commercial and recreational vessels, vehicles, and human activity. Noise levels fluctuate, with highest levels usually occurring during the spring and summer months due to increased boating and coastal activities.

Noise-sensitive receptors include humans and wildlife (primarily birds) above water, and marine/estuarine species under water.

In-water work activities contribute to noise in the underwater environment and are a concern for both the NMFS and the USFWS. There are numerous contributing sources to background marine sound conditions, including those from marine mammals (71 dB), lightning strikes (260 dB), waves breaking, and rain on the open surface and by human or mechanical sources including recreational activities and boating (150-195 dB). These levels are maximum source levels. Although there are many sources of noise in the underwater environment, the most common sources of noise associated with construction activities are via hammering. Impulsive noises like this have short duration and consist of a broad range of frequencies (CRS Report 96-603). Similar to above-ground noise, underwater noise levels fluctuate in the project area with the greatest impacts coming during the spring and summer months due, primarily, to increased boating activities.

Environmental Consequences

The ferry service is expected to make three round-trips per day between the three areas in the peak season. The operation of the ferry service would result in long-term, minor adverse impacts to soundscapes by increasing the boat traffic in these areas. The ferry service would have long-term minor impacts to underwater fauna near the new docks from the noise of ferry operation. There would be short-term minor impacts on the natural soundscape on land and under water from the installation of the floating docks, ramp, and landing, and the construction of the two queuing areas and the ticketing facility. The impacts on soundscapes would be localized to the construction area. If the interim docking option occurs, the impacts would be the same as those of the ferry operation only (i.e., long-term only, not short-term), as no construction would be necessary.

12.5.5.3 Biological Environment

12.5.5.3.1 Living Coastal and Marine Resources

Affected Resources

Protected Species

Protected species and their habitats include ESA-listed species and designated critical habitats, which are regulated by either the USFWS or the NMFS. Protected species also include marine mammals protected under the Marine Mammal Protection Act, essential fish habitat (EFH) protected under the Magnuson-Stevens Fishery Conservation and Management Act, migratory birds protected under the Migratory Bird Treaty Act and bald eagles protected under the Bald and Golden Eagle Protection Act.

The ferry purchase would not have any impacts to protected species and, as mentioned above, the previous EA and associated Section 7 consultations under the ESA documented that the operation of the ferry service is not likely to adversely affect listed species or critical habitats. However, these prior coordination effects did not evaluate potential impacts from the connected actions. Within and surrounding the two project areas, Gulf sturgeon, five species of sea turtles, and West Indian manatee could be present. Each of these species and their critical habitat (where applicable) are described above in section 12.2.5.3; therefore we only describe habitat use here.

DOI completed consultation with USFWS for the connected actions on February 6, 2014. The species of concern can be found in Table 12-6. USFWS concurred with DOI's determination that the project's connected actions are not likely to adversely affect West Indian manatee, Gulf sturgeon, or Gulf sturgeon's critical habitat (McClain 2014). DOI agreed to abide by the conservation measures found in Table 12-13. Further, USFWS agreed that the project will have no effect on the other listed species and critical habitats in the project vicinity, including five species of sea turtles. Within that consultation, DOI also coordinated with USFWS regarding the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act and the potential of the connected actions to affect those birds. Descriptions of the birds that are likely to utilize the area, and of their likely behaviors in the area, are listed in Table 12-8. Table 12-9 discusses the agreed-upon conservation measures for Migratory Birds.

DOI coordinated with NOAA-NMFS on ESA compliance for this project. NOAA concluded that any impacts of the connected actions (i.e., improving the dock facilities) on ESA resources need not be considered at this time because these particular actions will not be project-funded. Rather, the entity

building the docks will be responsible for that at the same time as acquiring a USACE permit for construction activities.

Gulf Sturgeon and Critical Habitat

Gulf sturgeon could be present in the area of new pier construction between mid- to late fall and early spring during their estuarine/marine wintering period. Gulf sturgeon would be expected to forage, rest, and migrate through this area.

Gulf sturgeon critical habitat is also present in the project areas. All marine and estuarine PCEs are present within the project area. The applicable PCEs for Gulf sturgeon in estuarine environments include 1) abundant food items, 2) appropriate water quality, 3) appropriate sediment quality, and 4) safe and unobstructed migratory pathways.

Sea Turtles

Each of the five species of sea turtles (loggerhead, green, Kemp's ridley, leatherback and hawksbill) could be swimming and possibly foraging (if forage is available) in the project area. Neither area supports any habitat suitable for nesting and no nesting is known to occur in either location.

Terrestrial loggerhead critical habitat has not been proposed in either project location.

West Indian Manatee

Manatees could be traversing through the project area when water temperatures are warmer (late spring/early summer to early fall). The project location does not support submerged aquatic vegetation; however, it could be present nearby. Therefore, manatees may forage in nearby areas.

Environmental Consequences

The impacts to listed species from the operation of the ferries in Pensacola Bay were addressed during the 2011 EA (discussed above) and the regulating agencies concurred with an "NLAA" determination. Nothing has changed with the proposed operation of the ferries and all previously agreed upon conservation measures would be implemented. (If the interim docking option is utilized, environmental consequences to protected species would be the same as for the ferry operation since no construction would occur.)

During construction of the connected actions, the piers at Plaza De Luna and Quietwater Beach, turbidity of the water may increase and the noise from the machinery may affect species within the area. If transiting the area, Gulf sturgeon could be startled by in-water construction or have difficulty navigating due to turbidity. We expect Gulf sturgeon to naturally avoid any areas of increased turbidity as they are not known to use turbid habitats. We do not expect this avoidance of the project area to result in changes to normal behaviors. Conservation measures in Table 12-13 should reduce any impacts to Gulf sturgeon from in-water construction to only short-term, minor impacts.

No long-term impacts to Gulf sturgeon's critical habitat or PCEs are expected from this project. There may be a temporary increase in turbidity, as well as changes in food abundance and water quality at the project site during construction but not throughout the critical habitat unit. However, these changes would be temporary and extremely localized and would not affect the open waters of Pensacola Bay. Conservation measures (see Table 12-13) would be implemented to ensure this project has no impacts to Gulf sturgeon critical habitat.

Sea turtles nest on seaward-facing beaches. No such habitat exists within the project area. Therefore the proposed project would not impact sea turtles in their terrestrial habitats. As with Gulf sturgeon above, increases in turbidity could occur due to project construction. We would expect turtles to move from the area of increased turbidity to avoid indirect effects from temporary changes in water quality. These movements would not be expected to change any normal behavior patterns. To avoid direct impacts to sea turtles, the Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006) would be implemented. Therefore, any impacts to sea turtles from the connected actions are expected to be short-term and minor. No sea turtle critical habitat is proposed or designated within the action area; therefore, none would be impacted.

West Indian manatees inhabit fresh, brackish, and marine environments in water 5-20 feet deep throughout their range. The new piers, once completed, should have no effect on manatees as they would be used for Ferry operation only rather than new boat slips or marinas (i.e., no increase in other boat traffic due to pier construction). No seagrass beds occur in the vicinity of the new pier locations. Manatees could be in the vicinity while the piers at Plaza De Luna and Quietwater Beach are under construction. Turbidity of the water may increase during construction and the noise from the machinery may affect species within the area. If transiting the area, manatees could be startled by in-water construction or have difficulty navigating due to turbidity. We expect the West Indian manatee to naturally avoid any areas of increased turbidity as they are not known to use turbid habitats. We do not expect this avoidance of the project area to result in changes to normal behaviors. Conservation measures should avoid direct impacts to manatees from in-water construction (see Table 12-13 below). Therefore any impacts to manatees are expected to be short-term and minor.

DOI consulted with USFWS regarding the connected actions and USFWS concurred that the actions are not likely to adversely affect the protected species in the area if conservation measures are implemented. No take of marine mammals under the MMPA is anticipated.

Table 12-13. Conservation measures to minimize impacts to protected species during implementation of actions connected to the NPS Ferry Purchase.

SPECIES	CONSERVATION MEASURES TO MINIMIZE IMPACTS
Gulf Sturgeon	<ul style="list-style-type: none"> • Instruct all personnel associated with the construction and operational phases of the project in the potential presence of Gulf sturgeon and the need to avoid collisions with them. Furthermore, inform the construction site personnel and personnel associated with operating the ferry of the civil and criminal penalties for harming, harassing, or killing species that are protected. • Keep construction noise low (in air and in water) to the greatest extent possible. • Construct piers from floating barges using floating turbidity barriers made of materials that would not allow Gulf sturgeon to become entangled. Barriers would be properly secured and would be monitored regularly so that no animals are entangled or trapped. • Care shall be taken in lowering equipment or material below the water surface and into the sediment. These precautions would be taken to ensure no harm occurs to any sturgeon which may have entered the construction area undetected. • Maintain spill response kits on board during construction. • In the unlikely event that a protected Gulf sturgeon approaches (within 100 yards) any near-shore, littoral areas of the proposed project, work would immediately cease until the sturgeon moves away from the area on its own volition. • All vessels associated with the construction project shall operate at “no wake/idle” speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All

SPECIES	CONSERVATION MEASURES TO MINIMIZE IMPACTS
	vessels would preferentially follow deep-water routes (e.g., marked channels) whenever possible.
Loggerhead, green, Kemp's ridley, leatherback, and hawksbill sea turtles	<ul style="list-style-type: none"> Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006) would be implemented.
West Indian manatee	<ul style="list-style-type: none"> Below represent agreed upon conservation measures as approved in the 2010 consultation and are from the in-water work. If the 2010 and April 2013 in-water manatee construction guidelines differ, the more recent would be followed: <ul style="list-style-type: none"> All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels would follow routes of deep water whenever possible. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shut down if a manatee(s) comes within 50 feet of the operation. Activities would not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-561-562-3909) for south Florida. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads <i>Caution: Manatee Area</i> must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

Migratory Birds and Bald Eagles

Affected Resources

Migratory Birds

Over 300 species of birds have been recorded at Gulf Islands National Seashore, which is near the project area. Bird species use the Seashore for resting, nesting, foraging, wintering, or migratory rest stops (NPS, 2006, as cited in NPS, 2011). However, the project areas are highly developed, urban piers and marinas. We expect common migratory birds to be present resting and foraging, but not nesting.

Table 12-14 identifies the types of species common in the Pensacola Bay area and the habitats and behaviors exhibited by these groups while present.

Table 12-14. Types of migratory bird species common at the Seashore (near the project area) and the habitats and behaviors exhibited by these groups while present.

SPECIES*	BEHAVIOR	SPECIES/HABITAT IMPACTS
Wading birds (herons, egrets, ibises, wood stork, American flamingo)	Foraging, feeding, resting, roosting, nesting	Wading birds primarily forage and feed at the water's edge. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily nest and roost in trees or shrubs (e.g. pines, <i>Bacchurus</i> and mangroves), which occur outside the project area.
Shorebirds (plovers, oystercatchers, stilts, sandpipers)	Foraging, feeding, resting, roosting, nesting	Shorebirds forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily nest and roost in the dunes.
Seabirds (terns, gulls, skimmers, double-crested cormorant, American white pelican, brown pelican)	Foraging, feeding, resting, roosting, nesting	Seabirds forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily roost in the dunes.
Raptors (osprey, hawks, eagles, owls)	Foraging, feeding, resting, roosting, nesting	Raptors forage, feed, and rest in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. Most raptors are aerial foragers and soar long distances in search of food. The areas near the Seashore where these birds roost and nest are not within the project area.
Goatsuckers (nighthawks, whip-poor-will, Chuck-will's widow)	Foraging, feeding, resting, roosting, nesting	Goatsuckers forage, feed, rest, and roost in the project area. However, they are nocturnal/crepuscular and therefore not active during the project work period. They nest in thickets and woodlands, which are not included in the project area.
Waterfowl (geese, swans, ducks, loons, and grebes)	Foraging, feeding, resting, roosting, nesting	Waterfowl forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting. These birds primarily roost and nest in low vegetation.
Doves and pigeons	Foraging, feeding, resting, roosting	Doves and pigeons could forage, feed, rest, and roost in the project area. However, they are unlikely to utilize sandy habitat.
Rails and coots	Foraging, feeding, resting, roosting, nesting	Rails and coots forage, feed, rest, and roost in the project area. As such, they may be impacted locally and temporarily by the project. However they are most likely to favor marshy areas. It is expected that they would be able to move to another nearby location to continue foraging, feeding and resting if disturbed by the project. These birds primarily roost and nest in marshes, which are not within the project area.
<p>*Gulf Islands National Seashore lists 345 species of birds known to occur there. The above table lists species guilds and the genus type for those most likely to occur there. The full list of species occurrences can be found at: http://www.nps.gov/guis/naturescience/loader.cfm?csModule=security/getfile&pageID=525505</p>		

Bald Eagles

Though Bald Eagles could fly over the project area, they are not known to nest in or adjacent to it. Bald eagles are known to nest within 1 mile of the project site (FDEP, personal communication, September 26, 2013). The bald eagle was delisted by the USFWS and is not listed as threatened or endangered by the FWC. The bald eagle is, however, protected by state law pursuant to 68A-16, Fla. Admin. Code and by the U.S. government under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles feed on fish and other readily available mammalian and avian species and are dependent on large, open expanses of water for foraging habitat. In Florida, conservation measures to protect active nest sites during nesting season must be considered to reduce potential disturbances of certain project activities. If bald eagles are found nesting within 660 feet of a proposed construction area, then activities would need to occur outside of nesting season or coordination with the USFWS would occur to determine if a permit is needed, and Florida's *Bald Eagle Management Plan* guidelines would be followed (FWC 2008). DOI also coordinated with USFWS regarding the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, and no take is anticipated.

Environmental Consequences

No bald eagles are known to nest within or adjacent to the project area. Also, although migratory birds may rest in the project area, the area is too developed and busy for them to nest there. If birds do occasionally spend time in the project area, they can move away from areas during construction. As such, impacts from this project on bald eagles and migratory birds would be short-term and minor. If the interim docking option is utilized, there should be no impacts on this resource.

Marine and Estuarine Resources

Affected Resources

Seagrass

Appropriate conditions for seagrass growth do not occur at either Plaza de Luna or Quietwater Beach.

Fish

More than 200 species of fish have been observed in waters surrounding the Seashore. The most abundant fish species is the anchovy (*Anchoa* sp.) and the silverside (*Menidia* sp.); both species are also abundant in the shallow nearshore waters. Myriad larval and young fish occupy the shallow waters around the islands and find food and protection in the seagrass beds (USACE, 2009 as cited in NPS, 2011).

Essential Fish Habitat

The 1996 Magnuson-Stevens Fishery Conservation and Management Act (MFCMA) requires cooperation among NMFS, anglers, and federal and state agencies to protect, conserve, and enhance essential fish habitat (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The designation and conservation of EFH seek to minimize adverse effects on habitat caused by fishing and non-fishing activities. NOAA's Estuarine Living Marine Resources (ELMR) Program developed a database on the distribution, relative abundance, and life history characteristics of ecologically and economically important fishes and invertebrates in the nation's estuaries. NOAA has designated EFH for more than 30 estuaries in the northern Gulf of Mexico for a

number of species of finfish and shellfish. All of Pensacola Bay is designated as EFH. Species with EFH at the City of Pensacola Plaza de Luna dock area are:

- Brown Shrimp (*Penaeus aztecus*)
- White Shrimp (*Penaeus setiferus*)
- Pink Shrimp (*Penaeus duorarum*)
- Reef Fish (43 Species)
- Red Drum (*Sciaenops ocellatus*)
- Coastal Migratory Pelagics

Species with EFH at the Pensacola Beach Quietwater dock are:

- Sandbar Shark (*Carcharhinus plumbeus*)
- Scalloped Hammerhead Shark (*Sphyrna lewini*)
- Tiger Shark (*Galeocerdo cuvier*)
- Spinner Shark (*Carcharhinus brevipinna*)
- Atlantic Sharpnose Shark (*Rhizoprionodon terraenovae*)
- Silky Shark
- Brown Shrimp (*Penaeus aztecus*)
- White Shrimp (*Penaeus setiferus*)
- Pink Shrimp (*Penaeus duorarum*)
- Red Drum (*Sciaenops ocellatus*)
- Reef Fish (43 Species)
- Coastal Migratory Pelagics

Shellfish

Several species of shellfish that are commercially, recreationally, and ecologically important occur in waters in the general vicinity of Quietwater Beach, including blue crabs (*Callinectes sapidus*), stone crabs (*Menippe mercenaria*), and many species of shrimp (NPS, 2011).

Marine Mammals

The Atlantic spotted dolphin spends the majority of its life offshore, while the bottlenose dolphins often travel into coastal bays and inlets for feeding and reproduction (NPS, 2006, as cited in NPS, 2011). Noise and other activity associated with proposed in-water construction may temporarily disturb manatees and dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. Standard Manatee Conditions for In-Water Work (USFWS 2011) would be implemented and adhered to during project construction (see Chapter 6 for specific conditions). It is anticipated that these conservation measures would result only in short-term minor impacts to manatees from the proposed project. Dolphins are a highly mobile species and would be expected to move away from the construction area during in-water activities. This ferry project would adhere to all applicable federal, state, and local permit conditions for the protection of marine mammals.

Environmental Consequences

Seagrass

There would be no effects on seagrass at Plaza de Luna or Quietwater Beach because seagrass does not occur there.

Special Status Species

For projects in waters accessible to sea turtles, NMFS has developed standardized *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS 2006). These conditions are typically applied to projects as part of the Clean Water Act Section 404 permit issued for in-water work. It is unlikely that the project site contains submerged aquatic vegetation, which is the preferred foraging habitat of sea turtles. To minimize risks in the aquatic environment, all construction conditions identified in the *Sea Turtle and Smalltooth Construction Conditions* would be implemented and adhered to during project construction to minimize the risk of collisions.

Noise and other activity associated with proposed in-water construction may temporarily disturb manatees and dolphin species in the vicinity of the project area through temporary impacts on prey abundance, water quality (turbidity), and underwater noise. Standard Manatee Conditions for In-Water Work (USFWS 2011) would be implemented and adhered to during project construction (see Chapter 6 for specific conditions). It is anticipated that these conservation measures would result only in short-term minor impacts to manatees from the proposed project. Dolphins are highly mobile species and would be expected to move away from the construction area during in-water activities. Neither the ferry operation nor the interim utilization of the existing docking facilities would have impacts on these special status species.

As noted above, consultations were initiated with USFWS for 18 species. DOI determined, and in a letter dated February 6, 2014 USFWS concurred, that the project would have “No Effect” on 16 species and would be “Not Likely to Adversely Affect” two species – the Gulf sturgeon and the West Indian manatee (McClain 2014). Impacts of this project on these species would be short-term and minor.

DOI coordinated with NOAA-NMFS on ESA compliance for this project. NOAA concluded that any impacts of the connected actions (i.e., improving the dock facilities) on ESA resources need not be considered at this time because these particular actions will not be project-funded. Rather, the entity building the docks will be responsible for that at the same time as acquiring a USACE permit for construction activities.

Fish

Due to the high level of mobility of fish and the short-term and highly localized nature of the construction related to this project, impacts on fish from this project would be short-term and minor. If the interim docking option is utilized there should be no impacts to this resource.

Essential Fish Habitat

There would be permanent impacts on EFH in the two project areas due to the installation of pilings for the docks. However, because the pilings would occupy such a small area and would be placed in areas that are already highly impacted by an existing concrete wall (Plaza de Luna area), dock (Quietwater Beach area) and boat traffic (both areas), the Trustees anticipate impacts on EFH would be long-term and minor. DOI coordinated with NOAA-NMFS on EFH for this project. NOAA concluded that any

impacts on EFH do not need to be considered for connected actions (i.e., improving the dock facilities). Rather, the entity building the docks will be responsible for that at the same time as acquiring a USACE permit for construction activities.

Shellfish

Due to the mobility of shellfish and the short term and highly localized nature of the construction related to this project, impacts on shellfish from this project would be short-term and minor. If the interim docking option is utilized, there should be no impacts to this resource.

Marine Mammals (excluding manatees which are discussed above)

Dock construction would be highly localized and short term. As such, impacts to marine mammals would be short-term and minor. The proposed project may permanently increase the potential for ferry collisions with certain species near the two new docks once the proposed ferry is operational. The risk of vessel strike impacts to certain species resulting from ferry traffic is very low due to most species' mobility and the required harm avoidance measures that would be implemented by ferry operators (e.g., training ferry crew members to observe for swimming marine species and restricting ferry speeds when they are observed). Additionally, the introduction of a scheduled ferry service could potentially reduce the number of vessels traversing from the mainland to Fort Pickens which currently make trips in these areas. Based on the above, the risk of vessel strike impacts to marine mammals from ferry operations is long-term and minor. There may be some impacts to marine mammals from the noise of pile driving, however these impacts will be temporary and localized (only during construction), and as such, would be short-term and minor. No take of marine mammals under MMPA is anticipated. If the interim docking option is utilized, the impacts would be the same as those of the ferry operation only (i.e., long-term only, not short-term), as no construction would be necessary.

Non-Native Species

Affected Resources

Non-native invasive species could alter the existing terrestrial or aquatic ecosystem within, and possible expand out into adjacent areas after the initial introduction. The invasive species threat, once realized, could result in economic damages. Prevention is ecologically responsible and economically sound. At this time specific invasive species that may be present on the project site or could be introduced through the project have not yet been identified.

Environmental Consequences

Best Management Practices (BMPs) to control the spread of any invasive species present, and prevent the introduction of new invasive species due to the project would be implemented. In general, best management practices would primarily address risk associated with vectors (e.g., construction equipment, personal protective equipment, delivery services, foot traffic, vehicles/vessels, shipping material). There are many resources that provide procedures for disinfection, pest-free storage, monitoring methods, evaluation techniques, and general guidelines for integrated pest management that can be prescribed based upon specific site conditions and vectors anticipated. Other measures that could be implemented if needed are identified in Chapter 12 Appendix A. Due to the implementation of BMPs, we expect risk from invasive species introduction and spread to be short-term and minor. If the interim docking option is utilized, the risk from invasive species introduction and spread would be even lower since there would be no new materials, equipment, or vessels on site to construct the facilities.

12.5.5.4 Human Uses and Socioeconomics

12.5.5.4.1 Socioeconomics and Environmental Justice

Affected Resources

A detailed financial analysis of the ferry operation is currently being prepared but will not be complete until summer 2014. Additionally, these actions are small enough in scope and far enough away (e.g., the docks are on the water) from businesses or groups that environmental justice issues and potentially affected parties are few, if any.

Environmental Consequences

Providing alternate access to the Fort Pickens Area would be important to the socioeconomic environment of the local area by providing a key missing infrastructure element for a future regional water transportation system. The ferry operation, as well as the installation of the floating docks, ramp, and landing, and the construction of the two queuing areas and the ticketing facility would likely require new jobs to be established. As a result, there should be no adverse impacts to socioeconomic factors. There should, however, be both short-term and long-term beneficial effects to socioeconomic factors in the areas served by the ferry operation. There should be no environmental justice impacts either. In fact, there may be long-term environmental justice benefits by providing another regional transportation option for people to use.

If the interim docking option is utilized, there would be no short-term beneficial impacts, but there could be long-term (i.e., until the new dock facilities are built) minor adverse impacts to socioeconomics if normal marina users (i.e. boat owners/users) used the marina less or differently than they currently are due to the presence of the ferries and passengers. There should also be long-term beneficial effects in areas served by the ferry operation. There may also be long-term environmental justice benefits by providing another regional transportation option.

12.5.5.4.2 Cultural Resources

Affected Resources

A survey of cultural resources in the Plaza de Luna and Quietwater Beach project areas has not yet been conducted. However, both areas are already highly disturbed and urbanized. The purchase of the ferries will not require a 106 review.

Environmental Consequences

A complete review of this project under Section 106 of the NHPA is ongoing and will be concluded prior to any project activities that would restrict consideration of measures to avoid, minimize, or mitigate any adverse effects on historic properties located within the project area. This project would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

12.5.5.4.3 Infrastructure

Affected Resources

There is much existing infrastructure in the areas where the new docks and facilities would be. This includes docks, landings, fueling infrastructure, utilities, parking lots, sidewalks, etc. As already

described, two new docks would be added, as well as a landing and a ramp in one area, passenger queuing areas, a ticket booth, and other minor improvements.

Environmental Consequences

This project could have small, long-term beneficial impacts to energy resources due to its effect of reducing car travel to the areas that the ferries will service.

Since the exact scope of the new facilities is still being determined, impacts on infrastructure are not perfectly understood at this time. However, generally speaking, these two new facilities, and the operation of the ferry system in these areas, would have no impact on some infrastructure and long-term minor impacts on others. For example, where infrastructure capacity such as transportation routes, ferry passenger waiting areas, ticketing facilities, possibly parking, bathroom capacity, and dock space would be increased, there would be no impacts; in fact there would be long-term beneficial impacts in some cases. However, where infrastructure capacity, such as water and sewer lines and electricity would not be increased, there could be long-term minor impacts. If the interim docking option were to be utilized, long-term beneficial impacts would not occur, but it could still have minor adverse impacts at both docking locations by increasing use of and demands on existing infrastructure. Where the ferry operation between points around Pensacola Bay and Fort Pickens reduces vehicle miles traveled on the roads between them, there would be a long-term beneficial effect to the road infrastructure here.

12.5.5.4.4 Land and Marine Management

Affected Resources and Environmental Consequences

Although the purchase of the ferries and the improvements to the docking facilities would result in the need for intensive management of the facilities, the ferries, and the ferry operation, the impacts from this project would be long-term and beneficial. This is because the project would improve public amenities and access to the ferry service, allow local resource and facilities managers to better manage areas for human enjoyment, and align with existing transportation management goals for the area.

If the interim docking facilities option is utilized, there would be an increase in visitors in the existing marina facilities, adding to the management requirements for those areas without the benefit of properly designed and sized facilities. However, the impact to land and marine management would still be long-term beneficial for the same reasons as the final version of the project above, but it would not be as pronounced because fewer amenities (in the form of the two dock facilities) would be constructed to aid in the public's access of the ferries.

Under the Coastal Zone Management Act of 1972, the selection of early restoration projects must be consistent to the maximum extent practicable with the federally-approved coastal management programs for states where the activities would affect a coastal use or resource. The Federal Trustees submitted a consistency determination for appropriate state review coincident with public review of the Phase III DERP/PEIS on December 12, 2013 (Federal Trustees 2013). The State of Florida responded on February 28, 2014, concurring with the federal determination of consistency for purposes of the Phase III early restoration plan (Milligan 2014).

12.5.5.4.5 Aesthetics and Visual Resources

Affected Resources and Environmental Consequences

The project areas are currently highly developed and the naturalness of each are significantly and, for all practical purposes, permanently compromised. Impacts to aesthetic and visual resources could be long-term and minor for those who prefer more natural landscapes/seascapes. However, it is also possible that the aesthetic experience for those using the ferries in these areas would be improved. Thus there may be a small, long-term beneficial effect.

If the interim docking option is utilized, impacts could be long-term and minor if visitors don't enjoy seeing the ferries and passengers at the docks, but the impact would be less because no additional facilities would be built.

12.5.5.4.6 Tourism and Recreational Use

Affected Resources

In the four years prior to Hurricane Ivan (2000-2003), annual attendance in the Fort Pickens Area averaged approximately 682,000 visitors (NPS 2011). After Hurricane Ivan damaged Fort Pickens Road on September 16, 2004, visitation to the Fort Pickens Area fell to virtually zero. Since the road reopened in May 2009, visitation has returned to levels similar to those prior to Hurricane Ivan, although it dropped again after the *Deepwater Horizon* oil spill.

Environmental Consequences

Providing water access to the Fort Pickens Area via ferry service would give visitors the opportunity for a water-based experience, which is not currently available. Installation of the floating docks, the ramp, and the landing, and the construction of the two queuing areas and the ticketing facility may have a short-term minor impact to tourism and recreational use if certain nearby areas are closed and inaccessible. However, since these areas would be used by many tourists, this project would have significant long-term, beneficial effects on tourism and recreational use. If the interim docking option is utilized, there could be long-term (i.e., until the new dock facilities are built) minor adverse impacts to tourism and recreational use because of potential crowding and other inconveniences associated with the lack of the new docking facilities.

12.5.5.4.7 Public Health and Safety and Shoreline Protection

Affected Resources

Levels of public health and safety in these areas is currently high, although there are always some risks to public safety around water and moving vessels such as boats. Construction work in the areas would be done to code, including meeting all OSHA standards for workers. This includes the standards to which the ferry boats themselves would be built. Areas under construction would be demarcated so that the public stay out and away from potentially harmful materials or situations. Once passengers are using these areas in the future, all federal, state, and local safety requirements for the operating of the ferry service would be followed. This includes the handling and use of hazardous materials such as boat fuel, solvents, biocides, lubricants, etc. Also, ferry boats moored at the marina could potentially serve as a source of non-point pollution resulting from inadvertent releases of fuel or oil.

Regarding shorelines, the City facility would be built on an already hardened (concrete) "shoreline" and the Pensacola Beach facility would be off the shoreline altogether, extending from the existing dock.

Environmental Consequences

Given the information stated above, impacts of the project to public health and safety would be short-term and minor during project construction, and long-term and minor during ferry operations around these new dock areas. If the interim docking option is utilized, impacts on public safety would be more adverse, but still long-term (i.e., until the new dock facilities are built) and minor, because the docking areas in particular would not be optimally sized or constructed to accommodate the greater number of people using them. There may also be some long-term beneficial effects if boat trips – presumably safer than car trips – reduce risk to the public who are traveling between the areas serviced by the ferries.

Regarding hazardous materials, in the event of a fuel or oil spill from construction equipment, all procedures, regulations and laws pertaining to Oil Spill Prevention and Response would be adhered to and the incident would be reported to appropriate agencies. As such, there would be no known effects of hazardous materials on public health and safety.

There would be no known effects of the project or ferry operation around these two new docking areas to shorelines.

12.5.6 Summary and Next Steps

The proposed Gulf Islands National Seashore Ferry Project involves the purchase of up to three ferries to be used to ferry visitors (no automobiles) between the City of Pensacola, Pensacola Beach, and the Fort Pickens area of the Seashore in Florida. A viable ferry service to this area of the Seashore would allow visitors to enjoy the Seashore not only if the road were to be destroyed again, but also by providing alternative options for visitor access. The project is consistent with Alternative 3 (Contribute to Providing and Enhancing Recreational Opportunities) and Alternative 4 (Preferred Alternative).

NEPA analysis of the environmental consequences suggests that while minor adverse impacts may occur to some resource categories, no moderate to major adverse impacts are anticipated to result. The project would enhance and increase the public's use and enjoyment of the natural resources by providing a ferry service between the City of Pensacola, Pensacola Beach, and the Gulf Islands National Seashore. The Trustees considered public comment and information relevant to environmental concerns bearing on the proposed actions or their impacts. The Trustees determination on the selection of the project will be included in the Record of Decision.

12.5.7 References

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